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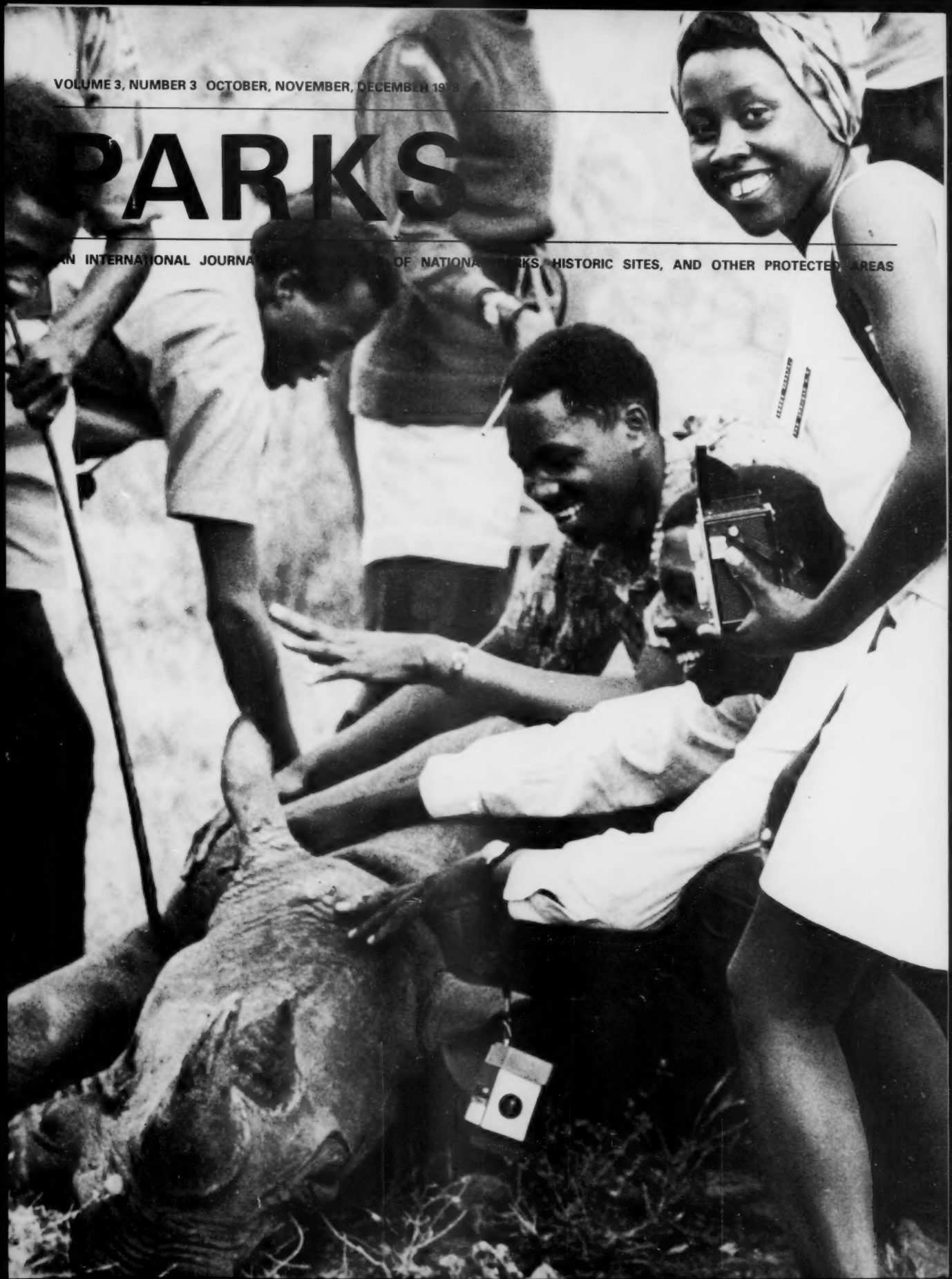
PARKS

AN INTERNATIONAL JOURNAL OF NATIONAL PARKS, HISTORIC SITES, AND OTHER PROTECTED AREAS



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Front cover: This rhino is one of the tame "Orphans of Tsavo," friendly enough to young members of the Wildlife Clubs of Kenya. Photo: Sandra Price. Back cover: Camels have been supplied by the World Wildlife Fund to the Ranthambhor Tiger Reserve for patrols in this arid region

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Sandra Price

Conservation Education: The Wildlife Clubs of Kenya

December 1978 will mark the tenth year since the highly successful Wildlife Clubs of Kenya (WCK) program was conceived. Now, when people ask, "Does the Wildlife Clubs approach really seem to work?", we can readily point out some very marked and favorable trends among Kenyan youth who have participated in this conservation education movement.

Evidence of a strong desire on the part of young Kenyans to become more directly involved with wildlife conservation appeared much earlier, in fact, for it was a group of secondary school students who originated the idea of having a Wildlife Club in their school, to work together and learn more about the wildlife for which their country has become so famous. Their timely concern came to the notice of a number of locally based conservation organizations, including Kenya's own Ministry of Tourism and Wildlife, the African Wildlife Leadership Foundation, the East African Wild Life Society, and the Elsa Appeal. Enough moral and financial support was provided, in late 1968, to organize a few Wildlife Clubs in secondary schools and training colleges, and to fulfill commitments each year in the way of printed information, field courses, and visits to schools with film programs and lectures. In the ensuing years, as the WCK secretariat grew from one staff member to six, and the scope of wildlife-related activities broadened, the WCK program emerged as "an idea whose time had come" in Kenya, and indeed on the African continent.

From an initial membership of twelve schools in 1968, the WCK Association has grown to encompass 570 Wildlife Clubs, signifying a yearly membership of 30,000 students, in what has evolved as a very personalized program, in terms of WCK staff involvement with student members particularly.

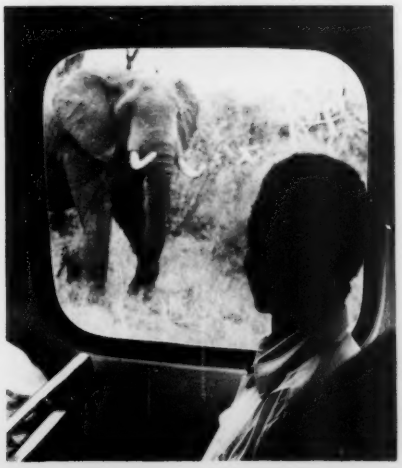
WCK's objectives are (1) to spread interest and knowledge about wildlife and the environment among the people of Kenya, (2) to make them aware of the great economic, cultural and aesthetic value of natural resources, and (3) to develop a better understanding of the need to conserve natural resources for the benefit of the nation and its people.

As the first staff member at WCK headquarters in Nairobi, I set about interpreting these broad aims into practical methods, and was soon joined by Nathaniel Arap Chumo, a Kenyan biology teacher, who now heads the WCK secretariat, from which I departed in 1978. Nathaniel heads a staff of 5 other energetic young Kenyans.

WCK is a charitable, non-profit-making organization, and so of course all funds for its activities come from annual grants or donations provided by the above-mentioned organizations, and others such as the Frankfurt Zoological Society, World Wildlife Fund, CIDA, and a few private donors.

What do Wildlife Club members actually do? Students want to see wildlife and scenery with their own eyes. This can be difficult for them because of lack of transport and the remoteness of urban or settled areas from the last wildlife strongholds in East Africa. For these reasons a large majority of teen-aged Kenyans have never seen elephant, rhino or lion in their lives. It's no surprise, then, that visits to National Parks top the list of preferred activities, and WCK staff endeavor to assist in any way possible to enable groups to visit these places. To that end, WCK is able to provide complete sets of camping equipment for overnight stays in Parks and Game Reserves. In early 1979 the Kenya Government will donate two large passenger buses to WCK for use on field courses and other educational excursions. Entry fees to National Parks are waived for Wildlife Clubs.

Left: This student is seeing an elephant for the first time in his life during a WCK field course, at Tsavo East National Park, Kenya. Right: Wildlife Club members at Mzima Springs in Tsavo West National Park, Kenya.



Since Park visits are the most difficult, logistically, for students to organize, WCK has aimed to supplement these relatively rare trips with a wide variety of other projects and practical activities — something to please everyone, as it were. We must interest students in the natural history to be studied right on their school grounds, and we seek to do this in ways perhaps more stimulating and less routine than an everyday school biology lesson. A WCK Sourcebook, given to each newly-formed Club, describes projects which can be carried out over either a long or short term, near school. These range from habitat mapping and wildlife inventories, to leaf printing and plaster casting of animal tracks. The average size of a Wildlife Club is 40 members, and in order to keep this many people busy it is usually the practice to divide them into groups (e.g., Cheetah Group, Simba Group, Eagle Group). Each group pursues a special project during the school term of three months. One might make a collection of all indigenous plants near the school, including information on how the local people use the plants for food, medicine, ceremonial or other purposes. Another group might inventory all the birds in the area, and learn about their eating, nesting, mating and migratory habits. Yet another group might set about interviewing local villagers on their attitudes towards wildlife, or compiling a chronology of animal populations and disappearances in their district.

Our object, in all activities concerning the study of natural history, is to get students beyond the mere naming of species, and involve them in an appreciation of the intricacies of nature, revelations about animal behavior, and a realization of ecological relationships.

Competitions for artwork, essays, or slogans involve other students with special interests; whereas those with a promotional bent might carry out local fund raising activities, or the organizing of a public demonstration to protest poaching, or the sale of wildlife trophies, or to congratulate the Kenya Government on conservation measures such as the Hunting Ban which was imposed in 1977.

Wildlife Clubs receive an array of printed educational materials throughout the school year, including a 50-page magazine, KOMBA (Kiswahili for bushbaby) prepared specially for them three times per year. KOMBA includes articles by prominent conservationists, many illustrations, and most important, pages of the students' own opinions, adventures, poems, drawings and letters.

But printed materials and activity Sourcebooks are not enough on their own to keep motivation high. Visits to wildlife areas are all-important, but as mentioned earlier, the most difficult to achieve. WCK has partially solved this dilemma by running a series of week-long field courses each year, held in one of Kenya's national parks. Each course includes 30 student leaders of their respective Wildlife Clubs, brought together from every part of Kenya. WCK's aim is to give them a more thorough background in conservation activities. Participants are given lectures by wardens and scientists, and practical demonstrations by course leaders, e.g., how to plant tree seedlings. They attend sessions on the problems and solutions involved in running a good Wildlife Club. Debates cover such topics as poaching or land encroachment. They are expected to share all that they learn with fellow members in school, and we find that one person's experience is enough to galva nize an entire group with renewed enthusiasm and determination.

Reinforcement is provided by a WCK Education Officer who travels year-round in a Mobile Unit, providing 3-hour programs to each Wildlife Club in a particular area. A typical visit to a Club includes a talk by the Officer, a survey of Club projects (e.g., fish pond, bird feeding platform, "Club museum"), a practical demonstration (e.g., collecting tracks of small birds or animals on sooted cards), and a wildlife film for members or for the entire school body of up to 600 people. Such visits greatly boost Club morale and increase participation in nationally organized WCK activities.

It is encouraging that many other countries are now setting up education programs based on the WCK model. Uganda, Tanzania, Cameroon, Zambia, Botswana, Malawi, and India are some of the countries which have either developed flourishing conservation education programs, or are about to embark on them in 1979.

Let us hope that some of the trends which are becoming evident in Kenya will be repeated in these other countries. For example, when I travel in Kenya nowadays it is not uncommon to meet people who participated in school Wildlife Clubs and have now gone into wildlife-related careers. This cannot be mere coincidence. Park wardens, tourist lodge managers, college lecturers, safari couriers — many of these positions are now filled by young Kenyans who gained initial interest in wildlife, and certainly a great deal of background and consciousness-raising, through their WCK participation. Each student candidate for the M. Sc. degree in the Biology of Conservation course at University of Nairobi attributes his choice of this field of study to former membership in a Wildlife Club. We can, therefore, be optimistic that in the coming decade these former WCK members will find their way into government positions where policy is set, laws are made, and the fate of Kenya's wildlife is ultimately decided.

Sandra Price has been associated with the Wildlife Clubs of Kenya as Project Coordinator from 1969. Under her direction the organization grew to 570 Clubs with about 30,000 members. Miss Price is now the Director of African Operations for the African Wildlife Leadership Foundation, P.O. Box 48177, Nairobi, Kenya. All photos are by the author.

Stefano Allavena

Circeo National Park: Reclaiming a Rich Heritage

In Homer's "Odyssey" the longest period that restless Ulysses willingly spent in one place was in the wild and beautiful realm of the sorceress Circe who, way ahead of the women's liberation movement, transformed men into swine. She was, of course, conquered by clever Ulysses, who in turn was beguiled by her charms for a whole winter until the complaints of his crew drove him to continue the fateful journey. The land of Circe and Ulysses — about 100 km south of Rome — is still beguiling. The most beautiful part of it is the Circeo National Park, established in 1934 on a varied and dramatic landscape of 7,445 hectares.

History of the territory of the park

In fact Mount Circeo, rising sheer above the sea and dominating the whole territory of the Park, with its numerous grottoes was an important refuge for prehistoric peoples. The oldest evidence is that of a skull of a Neanderthal man dating to the mid-Paleolithic period (190,000 to 90,000 years ago) discovered in a grotto of the mountain by a French archeologist in 1939. Further research led to many other finds of the later Paleolithic period (90,000-15,000 years ago), of the Mesolithic (15,000-6,000 years ago), during which *Homo sapiens* took the place of *Homo neanderthalensis,* and finally of the Neolithic (6,000-2,500 years B.C.) and Enolithic periods during which the main material for tools used in the Circeo area was obsidian obtained from the nearby islands of Ponza.

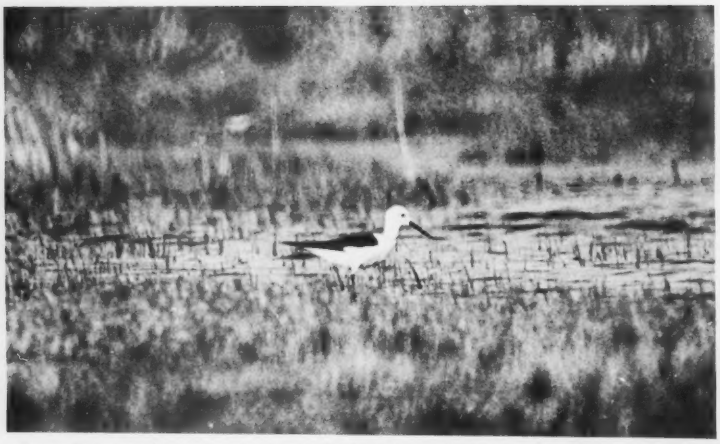
The Bronze Age (1,500-1,000 years B.C.) is represented by two vases found near the coastal dune. After a brief period of occupation by the Volsci, in 391 B.C., the area was occupied by the Romans who founded the town of Circei. The southern bank of the lake of Paola and the Circeo promontory are rich with remains of ancient Rome dating back both to the Republican period and to that of the Empire. After the fall of the Roman Empire the area lost importance and was partially abandoned.

In the sixth century the inhabitants, in order to defend themselves against pirates, built a citadel "Rocca Circeia" on the top of the mountain, of which today nothing remains. Between the sixth and 13th centuries the area was contested by various important families until in 1240 Pope Innocent III bestowed it on the Knights Templar, who built the present historical center of San Felice on the area of the ancient Circei. In 1501 the greater part of San Felice Circeo was destroyed by Fredrick I, King of Naples, and was rebuilt by the Caetani princes, who partly changed the urban structure, giving the historic centre its present pattern.

Following the overwhelming power of the Turks in the Mediterranean, five towers were built between 1562 and 1574 to defend the coast. Three of these were destroyed by the English in an attack in 1809. Subsequently, in 1822, the area was bought by the Apostolic Camera which kept it until the fall of the Papal State.

Finally on 10 November 1931 work was started on drainage of the famous Pontine marshes which, alternating with vast forests, stretched over large areas behind Mount Circeo and the coastal lakes. Twenty-one thousand ha of woodlands were destroyed, 49,300 ha were ploughed up, 2,665 km of outfall drains, 15,000 km of drainage canals, 21 water-scooping plants and 1,562 km of roads were built. Only 3,260 ha of the Terracina forest were spared, which in 1934, together

Mt. Circeo dominates this park, overlooking the rich forest and four brackish lakes stretching northwest along the coast. In the foreground is the Lake of Paola (also called Lake Sabaudia). There are extensive ancient Roman ruins here, including the remains of Emperor Domitian's palace which dates from the first century, A.D. Photo: Dr. Lucio Bortolotti



Above: Because of its strategic geographic location and wide variety of habitats, more than 220 species of birds have been identified in the park. This is a black winged stilt (Himantotus himantotus) *a fairly uncommon but regular visitor to the park's extensive wetlands. Photo: Dr. Lucio Bortolotti Right: The State Forest of Sabaudia, covering 3260 ha, is all that remains of once extensive woodlands. It is owned by the Park and is fully protected. Rich in species and the largest remaining lowland forest in Italy, it is a Biosphere Reserve under UNESCO's MAB Programme. Photo: Dr. Lucio Bortolotti*

with the Lake of Paola, the Circeo promontory and some neighboring areas went to form the National Park, which was created for the purpose of "protecting and improving the flora and fauna, conserving the special geological formations and the beauty of the scenery and promoting the development of tourism."

A small town, which took the name of Sabaudia, was even built in the heart of the park, on the banks of the lake of Paola.

After the Second World War, more exactly after 1950 and until about 1970, the coast, particularly between Sabaudia and the Circeo promontory and a good part of the southern slope of Mount Circeo became an elegant holiday resort. Too many luxury villas were built, severely degrading the area. In all these years the Park almost ceased to exist; hunting was practiced regularly and there was extensive felling of oaks at the expense of the forest of Sabaudia (all that remains of the ancient forest of Terracina).

The Environment of the Park

The Circeo Park is characterized by the extreme variability of its environment and is therefore exceedingly interesting both for the naturalist and for the tourist who is a lover of nature. In brief, these environments are the northern and southern slopes of Mount Circeo, the state forest of Sabaudia, the coastal dune and lastly the coastal lakes with the surrounding swamps and pastureland.

As a proof of the great naturalistic importance of the Park it may be recalled that all its humid zones (lakes of Paola, Caprolace, Monaci and Fogliano and surrounding marshes) are included in the list of Italian humid zones declared of international importance in the spirit of the Ramsar Convention for the protection of humid zones and their fauna. Moreover, recently the whole state forest of Sabaudia has been included in the MAB (Man and Biosphere) program by UNESCO as a Biosphere Reserve.

The southern slope of Mount Circeo is dominated by vegetation which thrives in strong sunshine, and in an arid and rocky environment. Marvelous aromatic plants may be found there and among the rocks the eye catches sight of the dwarf fan palm *(Chamaerops humilis)* which is the object of special protection, together with the centaurea cineraria *(Centaurea circae)*, a species which grows only in this area, and numerous other plants.

The northern slope, much more humid and fresh, is covered by a luxuriant evergreen forest dominated by oak *(Quercus ilex)*, mixed with various other species of deciduous trees.

The forest of Sabaudia is the largest lowland forest remaining in Italy today. It is dominated by large deciduous oaks, Turkey oak *(Quercus cerris)*, Farnetto oak *(Quercus farnetto)* and pedunculate oak *(Quercus pedunculata)*. In winter, thanks to the recent damming of some canals built during the land reclamation period, some areas are flooded, thus restoring the proper environment for various species of plants and animals, and some of the fascinating life of the old Pontine marshes.

The coastal dune stretches for about 23 km from the lower slopes of Mount Circeo to the Lido of Latina. It is on an average 200 m wide and the highest point is 27 m above sea level. Unfortunately its interesting and characteristic vegetation, adapted to saline conditions, sea winds and drought, is seriously degraded as a result of the asphalt road which runs along the whole length of its summit and allows the access of thousands of people during the summer, far too many for an environment with such a delicate equilibrium. The vegetation includes very interesting species such as the Phoenician juniper *(Juniperus phoenicea)*, cade *Juniperus macrocarpa)* and the very beautiful sea daffodil *(Pancratium maritimum)*.

The four coastal lakes are all in direct communication with the sea through canals and are brackish. In general they are rather shallow (on an average a couple of meters) and, in spite of a notable level of pollution, they are still quite abounding in fish, particularly eels *(Anguilla anguilla)*, grey mullet *(Mugil cephalus)* and thicklip grey mullet *(Mugil chelo)*, which are fished by local fishermen. Around the lakes there are extensive pastures which in winter become saturated with fresh water.

The Park, after the measures taken in recent years (extension of its boundaries and total prohibition of hunting, of which we shall speak later) has become important also on account of its fauna. Among the mammals the most important species is the wild boar *(Sus scrofa)*, of which there are many both on Mount Circeo and above all in the forest of Sabaudia. Until the marshes were drained roe deer *(Capreolus capreolus)*, now extinct, were to be found. Roe deer introduced from the Presidential Hunting Reserve near Rome 80 km to the north are

now being reared in a large enclosure, and in a few years' time they will be set free. It is interesting to note the presence of porcupines *(Hystrix cristata)*, badgers *(Meles meles)* and perhaps also otters *(Lutra lutra)*, besides other more common species.

But the Park is important above all for its birdlife. Thanks to its geographic position and to the variety of its environments it provides refuge for a large number of migratory, wintering, summering and non-migratory birds. In the last few years more than 220 species have been noted, many of which are rare and considered to be dying out by the Council of Europe. On the lakes and in the surrounding marshes there are about 3,000 ducks during the winter (until shooting was forbidden there were barely a hundred) and at least 10,000 coots *(Fulica atra)*, besides many other species which attract scholars and bird lovers from all over Italy.

Present Situation

Early in the 1970s the situation of the Circeo National Park changed radically. Building was considerably restricted, the magistrate opened an enquiry into abusive building, particularly on Mount Circeo, the construction of a potentially disastrous tourist port on the lake of Paola was prevented with difficulty, hunting has been completely forbidden throughout the territory of the Park and poaching has also been stopped, and finally felling in the forest of Sabaudia has completely ceased.

Moreover, in 1975 the Park was extended to take in the three coastal lakes of Caprolace, Monaci and Fogliano and the interlying areas, pasturelands, fields and marshes of considerable importance as a resting and wintering place for aquatic birds.

In 1977 large-scale excavation works were started near the lake of Paola in order to bring to light very important ruins dating back to ancient Roman times. These are, in fact, the ruins of Emperor Domitian's palace built in the 1st century A.D.

On the other hand, the Park finds itself objectively in a situation which is certainly not an easy one. It is located at about 100 km to the south of Rome and there is a thickly populated area behind it. Consequently, owing to its rather small size, it is subject to human pressure which in some areas and in certain periods of the year is far too great. One has only to think of the coastal dune where, beside the destruction of the vegetation, there is considerable erosion of the dune,which is also degraded by the abandonment of enormous quantities of waste.

Apart from this fact, which is undoubtedly the most serious from the standpoint of the conservation of the Park environment, very delicate problems are also continually arising through the presence of two towns within the boundaries of the Park, San Felice Circeo and Sabaudia. This situation has caused up to now a certain conflict between the administration of the Park and the administrations of the towns, which still persist in the idea of development based on giving the maximum impetus to residential building.

Another basic problem is that the Park owns only the forest of Sabaudia which covers about 40 percent of the total area of the National Park. All the rest is the property of others: the townships, private individuals, companies, etc. All this continually creates serious problems in the management of the Park inasmuch as very often the type of management which interests the private owner is in conflict with that favored by the Park.

The Future of the Park

As we have seen, the Circeo National Park still presents a series of environments of considerable naturalistic importance to which are added numerous traces of the various human cultures which have succeeded one another in the area since the most remote prehistoric times.

At present the administration of the Park is engaged in a great organizational effort intended to make both the local population and visitors understand the importance of the Park, also from an economic point of view, and the need to avoid at all costs any further degradation of its territory.

For this purpose several areas were recently set aside for picnics and an open air theater, in addition to which a tourist center is being built, where the most important aspects of the life of the Park and its history will be illustrated. During the last few years school children have been given special attention, guided tours of the Park have been organized and visits made by Park personnel to the schools themselves in order to illustrate with documentary films and slides the life of the Park and establish a direct dialogue with the children and their teachers. The promotional work is being carried out also by a series of popular and scientific publications.

Besides all this, careful attention is being paid to safeguarding the territory and to reconstructing the natural environment and to rediscovering and restoring the ruins of the ancient civilization of the territory.

In the state forest a plan is under way to reconstruct a pond of the type existing prior to the drainage work, while in the lake area negotiations are being made for transfer to the Park of an extensive swampy area of about 40 ha for setting up a natural reserve extremely important for avifauna. At the same time, efforts are being made to reach an agreement with the company owning the three more northern coastal lakes for a naturalistic type management of the lakes themselves, so as better to safeguard the environment, to protect it from pollution and make it suitable once more for receiving certain species of birds from humid areas, for example by building small artificial islands.

In recent times, besides the conventional tourists wishing to come to Circeo only for sun and sea bathing, an increasing number of tourists come to visit the Park during the winter, which has been up to now a completely dead season from a tourist point of view.

The fact that the Park may provide economic incentives for the local population is the best way to guarantee its future continuity and improvement. An example of the new climate which is being established between the Park and the local population is the recent request by the neighboring township of the Isles of Ponza to include in the Park an island of about 100 ha (Zannone), forming part of its territory. It is the first time that a municipality in Italy has requested something of this sort.

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Arthur Haulot

Cultural Protection Policy in the Field of Tourism

The growth of tourism is without any doubt one of the most salient features of our era. The late Pope Paul VI saw it as a crucial factor of social change and as a remarkable opportunity given to mankind to appraise Creation. For the past twenty years, religious and temporal leaders alike have underlined its philosophical significance, its economic and social impact, as well as the potential it represents for the preservation of peace between nations.

In 1977, transfers of wealth resulting from international tourism were estimated at US $53 billion. In the course of that year, 250 million people took part in the flow of tourism. Millions of men and women, all over the world, depended on tourism for their livelihood.

However, as is often the case, this outstanding development is not without drawbacks. Those who are concerned for the preservation of nature and landmarks, those who care for traditions and customs, those who are interested in culture, all these people have been struck and at times scandalized by the predatory effects of the seasonal migration of tourists. We ourselves[1] have demonstrated the extent of the danger, the complexity of the problem, and the urgent need to devise adequate and effective solutions.

A first comment which springs to mind is that, although it is true it is not always easy to reconcile the growth of mass tourism with the need to protect the human heritage, there is no conflict of any kind between the men responsible for the defense of these different aspects of human activity.

Experience

If there is any antagonism, it is not a matter of discordant approaches or intellectual options. Those who are responsible for the future of tourism have a fundamental interest in the protection of the common heritage. For without this heritage, be it natural or man-made, tourism would lose its purpose and substance. The problem is caused, on the one hand, by the uncontrolled growth of the movement, and on the other hand by the enormous material interests at stake, by a sometimes unbridled and unscrupulous search for short-term profit without any regard whatsoever for the future.

In the first resort this is a political problem, a question of administrative management, and in the last resort it is a matter of ethics. It could be defined as a disease of contemporary society. Hence this is the level at which remedial action should be sought — and found. Not for the benefit of those who exploit tourism for their own selfish purposes, but for the benefit of society and of all its cultural components.

Some time ago, in this review[2] Gérardo Budowski explored ways and means of reconciling the requirements of modern tourism with the fundamental need to protect nature. We share his view entirely, hence in this respect we shall simply refer the reader to his article. But the relationship between tourism and nature conservancy is not the only factor to be considered in maintaining the balance between tourism and culture. Which is why we want to add the following broad considerations to those of Professor Budowski.

Tourism as a cultural factor

The conventional image of culture as a matter of acquired knowledge is now thoroughly out of date. That kind of culture was a feature of elitist societies with congealed structures and ambitions. Since the 19th century, the world has undergone fundamental changes, with the growth of industry, technology, science, of new political and philosophical concepts, and as a result of war and revolution. In the course of our own century, this process has speeded up and has become more and more widespread. Today culture has become part of the dynamics of man and of the world around him.

In addition to acquired knowledge, which in the industrially developed countries is increasingly accessible to greater numbers, culture is seen also as one aspect of the maturity of men, individually or *en masse*. Nowadays culture is a matter of open research, constant learning, the ability and determination to compare, to appreciate, to accept or to reject. It is clear that in this sense tourism has become an important factor of culture, both as regards the needs which it creates and the opportunities it affords outside the conventional scholastic structure.

In the past few decades, cultural tourism has become one of the most vital features of international tourism, as well as being a valuable adjunct to the cultural heritage which needs to be defended and protected. The world over, glittering artistic events which are held throughout the summer could not survive without the moral and financial support of the tens of thousands of tourists who attend the festivals of Bayreuth, Salzburg, Venice, Avignon, Ghent and Leningrad as well as countless others in all parts of the globe. How would landmarks, castles and historic houses in Britain, Russia, Japan, America and countless other countries survive successive social upheavals if tourists did not flock to see them?

How, at the global level, can vast spending be justified to save Philae, Borobudur, Athens, Cuzco and other landmarks if this is not motivated in part by the need to preserve irreplaceable treasures for the tourist of the future?

How could this heritage be kept going if its existence and preservation had not become the ongoing concern of a great audience of tourists, resulting both in substantial financial contributions from the visitors themselves and in generous State support?

Nor is the meaning of tourism as a cultural factor, as we conceive it today, confined to the best-known events, and venues. Implying, as it does, voluntary participation, an act of will not passive submission,

[1] *See A. Haulot – Tourisme et Environnement – La recherche d'un* équilibre. Edit. Marabout — Verviers — Belgium 1974 — 416 p.
[2] *Parks – Vol. 1 – No. 4.*

tourism has become a fully-fledged part of the cultural dynamics mentioned above. Culture is acquired just as much through contact with the inhabitants of the place the tourist is visiting, through awareness of the specific problems of nations and peoples and of the universal character of the human destiny, as it is by looking at marvels and masterpieces.

Man himself is a cultural object, as much as any of the natural, artistic or historical features around him. This being said, it must be admitted that the mass of tourists can also be destructive. Intensive travel and seasonal migration can create a cultural desert, just as it can contribute to the well-being of guests and hosts. The danger exists, but should not be exaggerated. It is only too easy to claim that the mass of tourists have no "understanding" of the cultural heritage, or only perceive it in a manner which is absurd, close to caricature. Here we touch upon a fundamental problem, which is that cultural enrichment can only be achieved by dint of careful preparation — of the people concerned and of the items on view — and that the very best communications methods should be used. At the risk of seeming immodest, I should like to quote an example of what we have undertaken in Belgium in this connection.

For ten successive years we have invited the national and international audience to explore the country's cultural heritage. The campaigns have focused on our cathedrals, town halls and museums as works of art and witnesses of our historic past; together with hundreds of thousands of visitors, we have explored our castles, abbeys and monasteries; we have featured relics of bygone ages, as well as the splendors of historic gardens and estates. Finally, under the slogan "Belgium's Magnificent Seven," we have arranged a comprehensive tour of masterpieces by the painters Bruegel, Rubens, Van Eyck and Memling, and by the goldsmiths Renier de Huy, Hugo D'Oignies and Henri de Verdun.

For this particular campaign we made careful preparations via the mass media: the daily press, reviews, magazines, radio, television, films. For each of the masterpieces featured, we prepared an audio-visual show explaining the philosophy of the work, placing it in the context of the period. Like its predecessors, this campaign enjoyed spectacular and far-reaching success.

It is evident that our experience within the borders of a small country is equally valid elsewhere, certainly wherever those responsible for culture and those responsible for tourism cooperate willingly to solve the specific difficulties resulting from mass tourism.

* * *

As in all other fields, the important thing is to understand the problem before going into action, then to take steps as soon as understanding has been achieved. This has been the subject of a great many conferences, in all parts of the world. Unesco in particular has been fighting brave and often successful battles to defend our cultural heritage. One example of this is the "Convention concerning the protection of the world cultural and natural heritage."[3]

In addition to Unesco, such varied organizations as Europa Nostra, the International Office for Social Tourism, the International Alliance for Tourism, the International Association of Scientific Experts of Tourism, etc., have held conferences, congresses and seminars to foster permanent reflection about every facet of the tourism-environ-

[3] *Drawn up in 1972 and effective since 1975, the first measures taken in application of this convention date from 1977. However, so far only 41 countries have officially accepted the principles and programs which it sets out.*

Belgium's priceless art treasures attract many thousands of visitors each year. Among those included on regular tours are the Van Eyck polyptych, "Adoration of the Mystic Lamb," Bruegel's "The Fall of Icarus" and the baptismal font in the St. Barthélémy Church, Liége.

ment problem, and in particular the question of how to foster cultural knowledge through tourism.

As regards the specific area being discussed here, the most important thing was to sensitize the organizers of tourism to its positive and negative effects, particularly on cultural life and on the environment in which it takes place. This aspect of the problem was tackled recently in the course of a "summit" conference held in Brussels (in November 1976) attended by the senior figures of the most representative international tourist bodies on the one hand, and on the other hand by those responsible for the protection of monuments, landmarks, nature and culture.

The Charter of Brussels which resulted from this meeting is now a binding commitment upon these leaders and, by extension, upon the whole membership of the organizations they represent.

Below is a summary of the main points contained in the Charter of Brussels. Meanwhile, what we would like to stress is that this determination to harmonize tourism and culture received the same enthusiastic support from the representatives of tourism as it did from those representing the world of culture. There could be no better omen for the future.

* * *

The Charter of Tourism

The following extracts are confined to the action program which was adopted unanimously by the signatories of the Charter. These signatories represented the following organizations:

for tourism:

- the International Alliance for Tourism
- the International Association of Scientific Experts of Tourism
- the International Hotel Association
- the International Office for Social Tourism
- the European Travel Commission
- the International Federation of Youth Hostels
- the International Automobile Federation
- the Universal Federation of Associations of Travel Agencies
- the World Organization for Tourism

for the protection of the cultural heritage:

- the International Academy of Tourism
- the International Association of Historic Gardens
- Europa Nostra
- the International Federation of Travel Journalists and Writers
- the Van Clé Foundation
- the ICOMOS
- the International Institute of Historic Castles
- the International Union of Architects
- the International Union for Conservation of Nature and Natural Resources.

action program

- the organizations representing Tourism on the one hand and those representing the protection of the natural and monumental heritage on the other hand, deeply convinced as they are that the protection and improvement of the cultural and natural heritage for the benefit of all can only be achieved in an orderly manner, i.e., by integrating cultural values with the social and economic objectives covered by planning of the resources of states, regions and local communities,
- note with the utmost interest the measures which each of those present is prepared to adopt in its own sphere of activity, and which are listed in the annexes to the present declaration,
- look to the national authorities concerned to ensure early and vigorous application of the international convention concerning the protection of the world cultural and natural heritage, adopted on 16 November 1972, and also of the Nairobi Recommendation,[4]
- hope that the World Organization for Tourism, in line with its aims, and Unesco within the framework of the above convention, will do everything in their power, in cooperation with the present signatories and with any subsequent signatories, to foster the implementation of the policy they have defined, which alone can safeguard mankind from the damaging effects of disordered growth of tourism, and which would be the very negation of their own objectives.

They hope that States, via their administrative structures, their travel operators and users associations, will take all appropriate steps to foster public awareness, to inform and educate those who travel as tourists, at home or abroad.

Conscious as they are of the pressing need to change general public attitudes towards the phenomena resulting from the massive development of tourism, they suggest that, from their early school days, young people should be taught to understand and respect landmarks, monuments and the artistic heritage, and that the written, spoken and visual media should alert the public to the facts of the problem, thus helping to make the world at large fully aware of the issues at stake.

Unanimous in their concern to protect the cultural heritage on which international tourism is founded, they undertake to sustain the battle which has begun on all fronts against the destruction of this heritage by all known sources of pollution; and they appeal to architects and scientific experts the world over to mobilize all the resources of modern technology for the protection of monuments.

They recommend that specialists engaged in the conception and implementation of travel programs drawing upon the cultural and natural heritage, should receive training appropriate to the nature and wider relevance of the problem, and that they should be involved from the start in the planning and implementation of schemes for touristic development and equipment. They solemnly declare that it is their aim to ensure respect and protection for the authenic and diversified character of cultural values both in the developing regions and countries and in the industrial countries; in the context of developing tourism, the future of the cultural heritage of mankind is a matter of complete unity.

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4. "Recommendation concerning the safeguarding and contemporary role of historic areas," adopted by the General Conference of UNESCO at its 19th session in Nairobi (1976).

Professor Arthur Haulot is High Commissioner for Tourism of Belgium, a post he has held for many years, and is widely recognized as an author on literary and cultural subjects. His office is at rue Marché aux Herbes 61, 1000 Bruxelles.

Peter Jackson

WWF and National Parks

The World Wildlife Fund (WWF) is an international charitable organization dedicated to saving the world's wildlife and wild places, carrying out the wide variety of programs and actions that this goal entails. Its fund-raising and publicity activities are mainly carried out by National Appeals in more than a score of countries throughout the world. WWF, founded in 1961, has its international headquarters in Morges, Switzerland, where it operates in close association with the International Union for Conservation of Nature and Natural Resources (IUCN) — Ed.

The human population explosion, with its concomitant demand for land and natural products, is putting increasing and evermore critical stress on the life support systems of our planet. The natural environment, encompassing the land and the seas, is the very foundation of life on earth and yet we humans are destroying and damaging it to such an extent that we may be putting our own future in jeopardy, along with that of innumerable species of animals and plants.

The case of the tropical rain forests is a good example of what is happening. According to FAO, the current rate of destruction is more than 20 hectares (50 acres) a minute. It seems incredible until you see massive machinery at work felling towering trees and sweeping aside vegetation with so little apparent effort; see smoke curling up from many points as fire eats away more forest, and realize that this is going on 24 hours a day round the globe. Already 40 percent of the original 15,920,000 square kilometres of the tropical rain forests has gone—40 percent of the richest environments on the planet. Lost with it have been species that might have been of direct value to mankind. Most of these are unknown, and of the rest, few have been examined or exploited.

Drylands are being degraded at over twice the rate of tropical forest destruction—44 hectares a minute—threatening 37.6 million square kilometres, or about 25 percent of the land surface of the earth, with desertification.

Meanwhile human population, now numbering well over four billions, is increasing at exponential rates which if continued will require the planet to support eight billion people early in the next century — provided disaster does not strike earlier; there are many profound thinkers who believe that disaster will strike in some form, which will represent nature's attempt to restore the lost balance.

Given that some exploitation of the natural world is inevitable, common sense demands that it be carried out with great care in order to minimize destruction and ensure the perpetual renewal of resources that is nature's gift. If rational management is to be achieved — and it must be — a high level of statesmanship will be required, statesmanship being the courage to take the long view rather than to seek short-term political gains. Even though there is undoubtedly increased awareness of the problem, the brake on reckless waste and destruction of natural resources has hardly been applied in most cases.

However, far-sighted people have long been fighting to conserve natural resources through the establishment of conservation areas, and at the time of writing the International Union for Conservation of Nature and Natural Resources (IUCN) recognizes areas which meet the requirements for inclusion in the *U.N. List of National Parks and Equivalent Reserves*. The new *List* will include about 2000 areas throughout the world.

When the National Park movement was born with the establishment of Yellowstone in 1872 the founders gave special emphasis to the area being preserved "as a public park or pleasuring ground for the benefit and enjoyment of the people".

While we can still subscribe to those sentiments, the emphasis today must surely be on national parks and other conservation areas as essential pillars of life on earth.

Since the establishment of the World Wildlife Fund in 1961, the saving of habitat has been given priority along with rescue of endangered species. Of course the two are inextricably linked for no species can be conserved, except perhaps as a zoo specimen, unless it has the free use of viable areas of its natural habitat, while on the other hand the threatened species may play an important role in the ecosystem.

Among the first 100 projects registered by the WWF, 36 were directly concerned with conservation of natural habitat, while 29 species projects inevitably depended on habitat maintenance. Now 17 years later, the records show WWF involvement with over 260 of the world's conservation areas in five continents and covering together an area almost twice the size of Texas or equal to France, West Germany, Italy and the United Kingdom combined.

Support has taken many forms. Trucks, cross-country vehicles,

Dunes and pines in the Doñana National Park, one of the richest wilderness areas in western Europe. WWF raised the funds to buy land which formed the basis of the park.

tractors, boats and light aircraft have been supplied to help in management and protection against poachers. Over 200 camels have been provided for desert areas in Africa and India. Establishment of telecommunications networks has been financed, uniforms and field equipment for guards, including binoculars and camping equipment, as well as fencing, have been supplied.

A good example of several facets of WWF involvement with a national park is provided by the Coto Doñana in southern Spain. This was still wild and little disturbed in 1961, the richest wilderness area left in western Europe, with its large heronries, some of the last Spanish Imperial eagles and lynxes, together with other wildlife in the varied habitats where the Guadalquivir estuary joins the Atlantic. But the area was obviously a prime target for agricultural and tourist development. Thus one of the World Wildlife Fund's first tasks was to raise funds to purchase key areas, the title deeds for which were handed over to the Spanish Government, leading to the formal establishment of the Doñana National Park in 1969. At the same time WWF funds were provided for vehicles; to establish a laboratory; replant cork oaks which are important for nesting and to produce fruit eaten by several species; to ensure fresh water supplies; and for studies into the effects of pesticides, which drain into the marshes from surrounding agricultural areas. The services of an ecologist with a long and profound knowledge of the Doñana have been provided by the WWF and he is collaborating with a US National Park Service team to help the National Institute for the Conservation of Nature (ICONA) establish a sound management plan to combine conservation with public access and scientific research. Emergency action was taken to send specialists to help in preventing recurrence of an outbreak of botulism, which caused a heavy loss of birdlife.

In Africa, Lake Nakuru is famed as "The Lake of a Million Flamingos", whose packed flocks "paint" the fringes of the lake a soft pink. A few years ago the protected area consisted only of the lake itself, and it was obviously threatened by potential development of the surrounding slopes which form its catchment area. Furthermore, these slopes had been maintained as large estates where antelope, rhino, leopard and other terrestrial species thrived, and they could have been threatened by changed land-use. Children in eight European countries, organised by the WWF, raised over $500,000 to enable the Kenya National Parks to purchase land and quadruple the size of the park, thus creating a *cordon sanitaire*.

In Latin America, Manu National Park in the Peruvian Amazon has been of special interest to the World Wildlife Fund. This is the second largest park in Latin America and its ecosystems range from lowland rain forests to alpine tundra with a rich diversity of animal and plant species. WWF grants have provided for construction of guard posts, provision of vehicles and training of park personnel. In 1974, at the request of the Government of Peru, WWF helped to elaborate a master plan, all the major recommendations of which have been accepted. Oil exploration and forest exploitation have been stopped, and tourism has started, and it is hoped that this beautiful area will become a model for conservation areas in Latin America.

The Leuser system of reserves in Sumatra, Indonesia, is one of the most important in Southeast Asia and covers 636,500 hectares of tropical rain forest, which is the home of threatened species such as orangutan, Sumatran tiger and rhinoceros, elephant and banteng. The World Wildlife Fund has been helping the Indonesian authorities for many years to maintain the reserves and has been funding scientific research in the area.

As the World Wildlife Fund has grown in strength, its accomplishments have given it a prestige which has enabled it to promote the establishment of national parks and reserves through high-level contacts with Governments.

The importance of conserving the Galapagos archipelago and its unique species was recognised right from the start of the World Wildlife Fund and one of the first grants went to the Charles Darwin Foundation to help the establishment of the Biological Station on Santa Cruz island. Since then over $600,000 have been channeled to projects to help the Government of Ecuador develop and maintain the National Park, and to support the work of the Biological Station. The control, and elimination if possible, of introduced pests, such as goats, dogs, cats, rats and exotic plants is a crucial part of the conservation programme in Galapagos and thus has received considerable support. At the same time university studies for the National Park's former Conservation Officer have been financed so that he can undertake wider responsibilities.

World Wildlife Fund programmes for conservation of the tiger and tropical rain forests have involved extensive assistance to parks and reserves. Under Project Tiger the Government of India has proclaimed 11 areas specifically as tiger reserves, for which the World Wildlife Fund pledged $1 million in assistance. This has involved equipment, as well as training and consultancy services for such subjects as vegetation and mammal population monitoring, and animal capture and

This is one of a number of Toyota vehicles supplied by WWF to Tanzania for anti-poaching work in the national parks.

Indian Tiger Reserve Directors receiving instruction in the use of drugs for the capture and tranquilization of animals.

Flamingos and pelicans in Nakuru National Park, which has received extensive WWF assistance.

telemetry. Tiger programmes are also being supported in Nepal, Bangladesh, Thailand, and Indonesia. While they involve saving a spectacular species, the tiger projects do in fact symbolise wildlife conservation as a whole, since the tiger's survival depends on water, cover, and an abundant population of prey species, such as deer and wild pig, which in turn rely on a healthy forest ecosystem. Furthermore the forests play a crucial role in conservation of water supplies for surrounding agricultural areas, and in modifying local climates. Thus the tiger conservation programme is of benefit to humans as well.

A major part of the World Wildlife Fund's Tropical Rain Forest Campaign has involved promoting the establishment of national parks and reserves and helping to equip and develop them. Detailed surveys of the various tropical forest ecosystems of Southeast Asia have been completed and recommendations made to Governments, and a similar one in tropical America is nearing completion. The tropical rain forests of Africa are then to be surveyed.

A $1 million joint programme of the World Wildlife Fund and the Government of Indonesia is closely linked with tropical rain forest conservation. This is an area where intensive exploitation of timber resources has been going on, leading to the possibility of much of the lowland forest ecosystems being eliminated in a relatively short time. Park specialists and biologists funded by the World Wildlife Fund are working with Indonesian Conservation Department, PPA, to set up new reserves and develop existing ones.

The current World Wildlife Fund Marine Campaign naturally involves promotion of reserves for marine animals and ecosystems. These include coral reefs and the fish communities they support, estuaries used by migrating waders and other waterfowl, crocodiles, seacows and seals. It is hoped that an international system of whale sanctuaries can eventually be developed to cover critical feeding, resting and reproduction areas.

It has always been necessary to keep a vigilant eye open for threats to the integrity of parks and reserves. Typical of these threats which have been investigated in the past by the World Wildlife Fund, as well as other concerned organizations, where the proposal for a ski resort in the Vanoise in France, and construction of a power station at Murchison Falls in Uganda. In some southeast Asian countries logging permits are still being issued for areas which are already parks or have been so designated. Such matters are taken up at the highest level of state or government where necessary.

It has long been apparent that a systematic approach to conservation of world natural resources is vital if real success is to be achieved. It was for this reason that the United Nations Environment Programme (UNEP) commissioned IUCN to prepare a World Conservation Strategy with the aim of identifying the fundamental requirements of conservation; suggesting how they can be met; and identifying the most important ecosystems and species requiring urgent conservation measures.

The Strategy has been prepared with the assistance of a wide range of scientists and other specialists from all over the world and is designed for implementation by governments, intergovernmental organizations, and international and national non-governmental organizations, both commercial and non-commercial. It will help UNEP, FAO, UNESCO, IUCN, World Wildlife Fund and other conservation organizations to implement programmes of high priority projects without duplication of effort, and which provide for complementary activities by other bodies.

In the Strategy the IUCN has identified a list of highest priority ecosystems of which representative samples are in urgent need of protection. It is headed by tropical rain forests, and runs through various other types of forest to deserts, tundra, grasslands, mountain systems, fresh waters and inter-tidal and marine areas. The future program of the World Wildlife Fund will conform to the Strategy and give priority to promoting and assisting parks and reserves in these areas.

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World Heritage List Established

After almost six years from its adoption, and several years of intense effort, the Convention Concerning the Protection of the World Cultural and Natural Heritage is now functioning vigorously to fulfill its objectives.

In brief, the purpose of the Convention is to "set up a system whereby the international community can participate actively in protecting those parts of the cultural heritage (that is, monuments, groups of buildings and sites) and the natural heritage which are of outstanding universal value."

That "system," which began operations when its intergovernmental guiding body, the World Heritage Committee, was organized in mid-1977*, has now produced the first entries on the World Heritage List. Meeting in Washington, D.C., from 5 to 8 September 1978, the Committee found itself in full agreement on 12 of the nominations before it for consideration. Four of these are natural areas. Properties included on the World Heritage List are published elsewhere in this article.

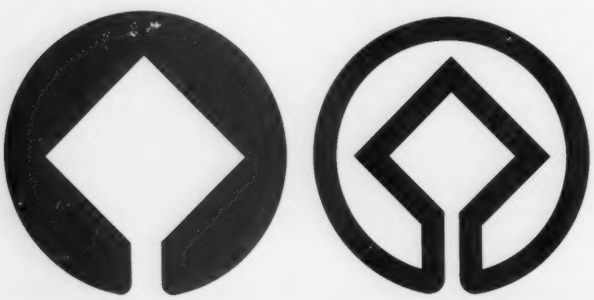
The Committee elected Mr. David Hales, Deputy Assistant Secretary of the Interior and head of the U.S. delegation, as Chairman to serve during the meeting and for the next year, succeeding Dr. Firouz Bagherzadeh of Iran.

In the course of its four day meeting many items were considered in addition to the nominations for the World Heritage List. These matters largely concerned technical operations of the Committee's work with States Parties to the Convention, including a study of terms and conditions for preparatory assistance in connection with nominations and requests for technical cooperation.

The Committee approved a budget of U.S. $140,000 for use in preparatory assistance, with a budgetary ceiling of U.S. $15,000 per project.

Funds totalling U.S. $150,000 for emergency assistance, and U.S. $90,000 for provision of assistance for training were approved.

The Committee adopted as the official World Heritage Emblem two versions of a basic design by Mr. Michel Olyff.



As conceived by the artist, this emblem symbolizes, "in a form sufficiently simple to be inserted on a map and to identify sites," the interdependence of cultural and natural properties. The central square is a form created by man; the circle represents nature, the two being intimately linked. The emblem is round, like the world, but it is also a symbol of protection. The two designs, identical in their concept, differ in their graphic approach.

The Committee felt that the emblem fully satisfies the criteria of universality and simplicity, and conveys the essential objectives of the Convention. Both versions will be used, and in any color, depending on the use to be made of them and considerations of an artistic and technical nature.

The Committee will meet again next year at which time it will review nominations for the World Heritage List which have been received by the Secretariat at UNESCO before the first of March 1979. From there on, however, it was decided that the annual deadline for submission of nominations will be January 1 to allow more time for the processing and technical review of the new nominations.

The point was stressed that the work of the Committee is ongoing, and that the time and order of entry of a property in the World Heritage List should by no means be interpreted as an indication of the qualification of a property or judgment on its value in comparison to other properties in the List, as all of them had met the criteria adopted by the Committee.

For the past year the World Heritage Committee has included fifteen members from Australia, Canada, Ecuador, Egypt, France, West Germany, Ghana, Iran, Iraq, Nigeria, Poland, Senegal, Tunisia, the United States of America, and Yugoslavia. As at least 40 States have now ratified or accepted the Convention, the size of the Committee will be expanded to 21 countries at the General Assembly of States Parties to the Convention which will be held during sessions of the UNESCO General Conference at Paris in November 1978.

The Committee meets annually to evaluate nominations which have been reviewed for technical compliance with the criteria. This basic technical review is handled, at the request of the Committee, by the International Council of Monuments and Sites (ICOMOS) for cultural areas and by the International Union for Conservation of Nature and Natural Resources (IUCN) for natural areas.

Further information on the Convention and procedures for submission of nominations or other matters pertaining to operation of the Convention may be obtained from:

The Secretariat,
World Heritage Committee
Division of Cultural Heritage
UNESCO
7, place de Fontenoy
75700 Paris
FRANCE

The Editor

*See PARKS Volume 2, No. 3 "Operational Guidelines for the World Heritage Committee"

World Heritage List Cultural and Natural Areas of Outstanding Universal Value as Approved by the World Heritage Committee, September 1978

Cultural Heritage

L'Anse Aux Meadows National Historic Park, Canada

This unique archeological site on the shore of the Epaves Bay includes the remains of eight Norse sod and wood structures from the 11th century A.D. These large dwellings, an iron smithy, and workshops are the earliest known European structures in North America, the site of the first iron working in the New World and the only authenticated site of Norse settlement. The site, in Newfoundland ranks among the major archeological properties of the world.

City of Quito, Ecuador

Quito, the capital of Ecuador, is bounded by volcanic hills and protected by ravines and folds. The Spanish colonists in 1534 were affected by their Andean predecessors, adapting their artistic creativeness to new buildings of stone, adobe, and brick. Quito is the capital of Spanish-American art reflecting in its civil and religious buildings and visual arts a harmony between human and natural forces.

Rock Hewn Churches, Lalibela, Ethiopia

The eleven churches of Lalibela were chiseled from solid rock, a gigantic accomplishment of engineering and architecture and a unique artistic achievement. There is an extensive system of defensive trenches and ceremonial passages. It is widely believed that they were hewn out to form a new Jerusalem after the Moslem conquests halted the Christian pilgrimages to the Holy Land. While some of the churches are in fair condition, others are badly deteriorated. A large-scale preservation project is needed.

Aachen Cathedral, Federal Republic of Germany

The Octagon with cupola of the Palace Chapel which Charlemagne had built from about 790 to 800 constitutes the well preserved core of Aachen Cathedral. Over the centuries many additions have given rise to its present appearance but the Carolingian core has remained unchanged. The cathedral was considered an architectural miracle by Charlemagne's contemporaries. The Frankish King was buried here and 30 kings succeeding Charlemagne have been crowned here. This unique artistic achievement is part of the most valuable architectural heritage of Europe and the world.

Cracov's Historical and Architectural Urban Centre, Polish People's Republic

Cracov's Historical and Architectural urban Centre, which has evolved over nearly a thousand years, is one of the most remarkable artistic and cultural complexes in Europe. Outstanding among the architectural heritage is Wawel Castle, seat of authority and residence of most of the ruling dynasties from the beginning of the Polish State. In the 16th century it was one of the main centres of literary culture. The Castle is one of the most perfect examples of Florentine Rennaissance outside Italy. It houses valuable works of art from many epochs.

Also on Wawel Hill, the most striking and salient element of the historic Cracov landscape, is the Cathedral, the burial place of the Polish kings. It was built from 1320-1364 on the site of ancient Romanesque temples, started 300 years earlier.

In the 13th century the main urban system, based on a detailed plan, was laid out around a central market square, 200 by 200 meters, still the largest square of any city in Europe. Parts of its original medieval buildings are conserved, as are fortifications which surround them.

Wieliczka Salt Mine, Polish People's Republic

The old Salt Mines under the city of Wieliczka is a monument unique in the history of mining; it has been worked since the Middle Ages and is still in operation. Among the extremely unusual group of workings are galleries, slopes, pits, ponds, and shafts at 11 levels with a combined length of 300 kilometers and a maximum depth of 327 meters. It sheds light on the development of mining techniques through the ages. A valuable collection of old tools and mining equipment inside the mine illustrates in original surroundings the methods used for extracting salt, safety measures, safeguards against water seepage, lighting and ventilating systems in the galleries, and the transporting of salt. The exhibit also includes archeological evidence which reveals that the surface deposits were worked as far back as the Neolithic Period.

The mine also contains unique works of mining art sculptured in the salt. Subterranean chapels with altars, thrones, and statues have been hewn from the rock-salt.

The U.S. Department of the Interior was host to the second meeting of the World Heritage Committee. Sessions were held in the Loy Henderson Conference room at the Department of State in Washington, D.C.

Island of Gorée, Republic of Senegal

Four kilometers off the coast of Dakar the Island of Gorée arises from its base of black basalt. Midway between Europe and the New World, Gorée was the scene of rivalry between European powers. A stopping point for Portuguese ships in the 15th and 16th centuries and for Dutch in the 17th century, it became a fortress which the English and French struggled over for many years. The island was a slave market until 1815 when the trade was abolished in the French colonies.

The Island of Gorée has considerable architectural interests. It is divided into nine sectors, coherent within themselves, some containing complete ensembles of buildings demonstrating the traditional architecture. Some of the structures are well preserved; others need and warrant restoration as architectural monuments and some are in ruins.

Mesa Verde National Park, United States of America

On Mesa Verde in southwestern Colorado there are preserved extensive remains of one of the major native American cultural traditions. This complex developed in delicate balance with the limited resources of the dry plateau region. The ruins are the most dramatic remains of the Puebloan culture which developed two millenniums ago, flourished during the 9th-13th centuries and continues today in a score of Indian villages in Arizona and New Mexico. These unique archeological remains represent one among many brilliant cultural traditions created by the Indians of North America.

Natural Heritage Areas

Nahanni National Park, Canada

Nahanni is a vast wilderness in northwestern Canada (1,850 square miles, 4,770 square kilometers) basically unmodified by man. Among its outstanding scenic and geologic features are the Mackenzie Mountains, river canyons, lakes, glacial features, hot springs, and caves. At high elevations the area supports alpine tundra while subalpine and boreal forests cover the lower mountain slopes and plateaus. Dall sheep, mountain goat, grizzly bear, grey wolf, and caribou are among the more spectacular large mammals. Populations of rare or endangered birds including the peregrine falcon, golden eagle, bald eagle, and trumpeter swan find suitable breeding habitat in the park.

Galapagos Islands, Ecuador

The Galapagos Islands lie astride the equator 525 sea miles off the coast of Ecuador. The archipelago consists of 19 islands of volcanic origin. They have a strange, "mineral" beauty which has been compared with that of ancient statuary. The observations on the Galapagos which Charles Darwin made in 1835 supported his work on the origin of species which overthrew accepted ideas on biological evolution. An unusually high proportion of the plants and animals are endemic to the Galapagos and include certain ancient species such as the giant tortoise.

Committee Chairman David Hales (USA), center, confers with Ann Raidl of UNESCO's Cultural Heritage Division. Dr. Michael Batisse, UNESCO's Deputy Assistant Director General (Science) is at the chairman's right.

Simien National Park, Ethiopia

The park covers an area of 165 square kilometers and is on the north edge of the Ethiopia plateau. Originally a huge volcano, the high Simien mountains have been eroded into precipitous cliffs and deep gorges. It is the habitat of the rare endemic Walia ibex, the Simien fox, and gelada baboon. The scenery is spectacular, rivalling the Grand Canyon of the Colorado River. Nearby is the highest point in Ethiopia, often referred to as the "Roof of Africa." Human use of 80% of the park has caused denudation, serious gully erosion, and depletion of the invaluable wildlife. The fair resettlement of the human population to adequate areas outside the park is of utmost urgency and importance.

Yellowstone National Park, United States of America

Yellowstone National Park includes nearly 900,000 hectares in the states of Wyoming, Montana, and Idaho. It is a living evolving record of volcanism with roots going back to Eocene time. Its most spectacular mountains rising to 3,400 meters are ancient volcanic remnants; its hot springs and geysers are the world's largest. The largest known caldera on earth — 100 times the size of Krakotoa's — comprises half the park.

Three major vegetation zones (spruce-fir, lodgepole pine, and Douglas fir-sagebrush-steppe) provide a setting for 1,000 species of plants and many animals including rare, threatened, and endangered species such as the grizzly bear, mountain lion, gray wolf, arctic grayling, bald eagle, and trumpeter swans. Mule deer, elk, moose, bison, black bear, coyote, and pronghorn thrive in vast areas of unspoiled wilderness.

Yellowstone's geysers are a spectacular concentration of a rare worldwide phenomenon. More than 2.5 million people visit the park each year, lured by Old Faithful and its hundreds of lesser counterparts. The superlatively scenic Grand Canyon of the Yellowstone has thrilled viewers and inspired generations of artists and authors.

PARK VIEWPOINTS

Huts versus Dispersed Camping: The Case For New Zealand

P. J. Devlin

Because opinions among park managers differ so sharply on the basic subject of this article, the editors felt it should appear under the "Park Viewpoints" heading rather than as an article in the front section. Reactions will be welcomed, as will discussions on other controversial topics. —Ed.

New Zealand is a long narrow country with over 2000 miles of coastline. Located in the South Pacific some 1610 km from the nearest point of Australia, it spans latitudes 34° S to 47° S and its climate varies from sub-tropical to sub-antarctic.

The North Island has 70 percent of the country's 3.3 million inhabitants, the balance living in the South Island. Both Islands, but particularly the South, are visually dominated by mountain chains of 2,000-4,000 metres. The upper timber line is generally found at 1500 m. or less, with alpine scrub and herb fields extending a further 500 m. Continuous vegetation does not generally extend above this altitude, particularly in the south.

The proximity of the Antarctic Continent and the extensive oceans, plus the mountains, gives the New Zealand high country sudden, and at times unpredicted, weather changes. Simple day trips can easily become extended and hazardous!

New Zealand's National Parks, and allied state forest areas, have traditionally catered for recreationists by providing hut or bivouac accommodation. This is partly an historical 'accident' and partly deliberate contemporary policy. Whichever the origin, hut provision is currently viewed with ambivalence. On the one hand they are seen as an institutionalized invitation for 'overuse' with all accompanying ills while on the other they are regarded as an essential management tool. Clearly therefore, we are talking about a facility provision in which a series of 'trade-offs' have guided management in a time-bounded sense. They are 'trade-offs' because arguments for and against are frequently seen to be equally compelling and legitimate. They are time-bound insofar that rational decisions made as recently as 15-20 years ago, may seem irrational in 1978. This article explores these 'trade-offs' before adopting a position in what will almost certainly be a continuing debate.

Background and History of New Zealand's Park System

New Zealand's first National Park was the result of a gift from the Ngati Tuwharetoa Maori people in 1887. Their gift of the volcanic peaks in the central North Island was a means of preventing their *tapu* (sacred) land from alienation or division by placing it under the protection of the Crown. Since this auspicious beginning nine additional national parks, two maritime parks, 16 forest parks and over 1,000 scenic and special reserves have been added. In total this means 13 percent of New Zealand is under complete or partial protection and includes the majority of our country's unique land forms and significant biomes. Active volcanoes, mountain peaks, glaciers, fiords, expansive lakes and extensive forests are all packed into this small country which has a land mass comparable to the U.S. State of Colorado.

Initial Developments

Within a few years of Tongariro's establishment, adventure-seeking enthusiasts were climbing the volcanic peaks and exploring its recreational potential. Adventure indeed it was. Rail links with this part of the country were not completed until the turn of the century and even then left the would-be visitor a day's walk from the beginning of any

Figure 1. New Zealand's ten National Parks. Three are in the North Island and seven in the South Island.

meritorious climbing opportunities. Most parks were similarly inaccessible and the understandable response to this was the erection of accommodation which would enable extended exploration opportunity. This generally meant little more than simple bunk space and an open fireplace on which to hang the traditional blackened billies (metal or enamelware cooking pots). Such was the nature of our first huts.

Figure 2. The Waihohonu Hut, built over 70 years ago in Tongariro National Park. This was one of the first huts. Photo: Tongariro National Park.

These early constructions were often little more than primitive slab or corrugated iron shelters yet they established a pattern in New Zealand mountaineering, being replicated at strategic 'jumping off' places for most major climbing and tramping routes. They represented all of those things which typify mountain huts, being small, draughty, and cold away from the fire. Yet they were a sanctuary in bad weather, a stage for reminiscing and yarn swapping, and above all they provided the right atmosphere for the intense sociability which is almost unique to the hut setting.

Game animals, principally deer species, chamois and thar, were introduced to New Zealand's pristine forests and mountain lands in the second half of last century. There were no indigenous browsing mammals or natural predators and the impact of these animals after a long period of protection and rapid reproduction was devastating to the natural vegetation and soil stability. Legislation declaring these introduced animals 'noxious' was passed through Parliament and in the late 1940's a campaign for their eradication was initiated by the Department of Internal Affairs and later taken over by the New Zealand Forest Service. As part of this culling program, an extensive system of huts was established and maintained throughout much of the mountain land and back country, and these, plus the continuing efforts of climbing and tramping organizations, resulted in a comprehensive hut network by the mid-1960's.

The Recreation Boom

In common with much of the Western World, the relative affluence of the 1950's and 1960's was reflected in increased mobility and available leisure time. Parks noted big increases in visitor figures including significant numbers wishing to tramp in remote parts of the park. Traditional tramping routes had long been established and were either 'worn in' to the landscape or marked with poles, or track discs. The very presence of these routes, which were generally marked on maps, stimulated even higher use of all existing facilities and put pressure on our Parks' administrators to provide more and better accommodation.

This has been largely completed and it can now be said that the various land management agencies, including National Parks, have provided a comprehensive system of huts and shelters to cater for their overnight back country recreationists.

New Zealand trampers and climbers rarely rely entirely on hut accommodation. The chances of extreme weather conditions in the mountains, even in the summer, ensures that serious climbers take a tent or tent fly with them. The likelihood of inexperienced trampers getting into trouble is always a real possibility and therefore a concern of the park administrator.

Camping in New Zealand parks is generally unrestricted and no permits are required to enter back country areas. Consequently a tradition of 'aggressive' egalitarianism has developed among back country users which manifests itself in strongly individualistic patterns of behavior. The right to camp anywhere one pleases has been jealously maintained and in only a relatively few areas has this led to unacceptable degradation of the physical environment.

Preferences of Park Users

Study of the relevant literature leaves doubts that the motivations, and hence the preferences, of back country users are fully understood. The physical, intellectual and social-psychological variables of individuals are seen to be moderated by a wide spectrum of constraints, including life-cycle, available time, novelty, preferred company, and the power or aura of the physical resource. While most of these variables are self-evident, their influence on user attitudes *vis-a-vis* huts or tent camping may be quite profound. Thus, the more experienced park user is less likely to use huts if this means crowds. The social component of his experience is best fulfilled by his chosen company in the intimate sense of 'small group and environment.' For the less experienced, relative preceptions of crowding enable a tolerance of greater numbers but neither argument is necessarily exclusive. Huts sited at varying distances or tramping times, or delimited because of the technical skills required to advance from them, all suggest that a system of physical or social zoning is likely to operate. They will provide different things for different people at different times, complementing the physical and psychological benefits of the park in a uniquely satisfying way. Park visitors become back country users because they want to get away temporarily from urban places; to enjoy the simplicity of life in the park; the physical and intellectual challenge; the beauty of the landscape and the company of one's friends and other compatible people.

Their aspirations, therefore, are sustained by the peaks climbed, the route traversed, and by the capacity of their overnight accommodation to fulfill their basic physiological and social needs. This means protec-

Figure 3. The Hope-Kiwi Lodge in Lake Summer Forest Park is designed for large groups including school parties. Located approximately five hours' walking time from the road, it provides splendid opportunities for recreation including climbing, hunting, fishing and natural history. To many tramper-users the lodge is too big. They see in this type of building a loss of more intense sociability typical of the smaller hut. However, they have the choice of going elsewhere but school parties do not. This type of construction, in moderation, fulfils real zoning needs. Photo: New Zealand Forest Service. J.H.G. Johns A.R.P.S.

tion from the elements, opportunity to cook food, keep warm, talk oneself 'out' and 'curl up' to sleep.

Huts may thus be seen as valuable to the extent they assist substantial numbers of users to achieve these goals without negating other important resource objectives.

Management Preferences

The park manager also has his goals. His is the task of reconciling preservation with use. He shares the objective that the back country user should be safe, warm and secure. But he does not want this to be at the expense of the park, and the provision of a hut, firewood or alternative fuel, and a satisfactory system of rubbish disposal, may well bring the objectives of manager and user into an acceptable juxtaposition.

As previously suggested, huts are primarily a management tool. Properly located and maintained in non-fragile areas they are an aid to preservation, steering trampers away from alternative sites which tend to proliferate over wide areas. Disused fireplaces, by convenient stream crossing or in sheltered clearings close to main tracks, are unsightly evidence of decades of 'camping by choice.'

Clearly however, hut provision does not suit all trampers. Who wants to share the smoke-filled atmosphere of a hut when the pristine night sky is available? Who wants the doubtful quality of 'other' groups when one's close friends are already alongside? Who requires the mixed blessing of a park board bunk when mother-earth is waiting and the dull glow of the camp fire is beckoning the close of a long and satisfying day? This is the 'stuff' of which backcountry experience is traditionally made and which we cannot afford to lose.

Properly controlled, tent camping must always remain as an essential and available alternative to huts, but in this country, at least it should be considered complementary rather than mutually exclusive with huts. Indeed, each has its own particular strengths and advantages important to management.

Huts offer a comforting margin of safety, comforting for both the tramper and the park management. New Zealand mountain weather is notoriously fickle; earlier this year large numbers of trampers were trapped by storms and swollen rivers in one South Island park. Helicopter search and rescue operations were available as soon as the weather abated but the safety of trampers because of the huts was generally assumed. Checks of mountain huts rapidly confirmed the whereabouts of park visitors and the anxiety of relatives and friends was relieved some days before the last trampers were able to safely negotiate the rivers and return to their homes.

Figure 4. Properly sited and constructed, huts can provide a margin of safety which is comforting to both recreationist and management. The Tasman Saddle Hut at 2,300 m is in Mt. Cook National Park. Photo: Mt. Cook National Park.

However, the case of the 'anti-hut tramper' mentioned previously may seem to suggest that one should be able to please one's self. It is this *laissez faire* attitude which the author finds indefensible. Management cannot afford the luxury of unrestricted concession to user preferences if this is going to result in accelerated environmental degradation. The question then becomes one of achieving objectives by coercion or by education. It is a matter for regret that education is so slow, thus forcing management to adopt practices which are more likely to achieve desirable behaviors and which encourage the development and diffusion of environmentally appropriate norms. Hence the importance of siting huts and the tracks that lead to them. Tracks must be designed with care, avoiding fragile areas and scarce resources and are best 'hardened' in high use areas by the addition of surfacing and properly constructed steps or board walks. In New Zealand, this quality of track is found only in or near to developed areas. Other tracking systems which link up with huts or high level climbing routes are maintained at a lower key. In areas zoned as *wilderness*, there are *no huts* and *no tracks*.

The need for continuous education of park users and the recognition of changing norms should go hand in hand with other management tools. As user numbers increase, behaviors which were once accepted as normal must now be seen as inappropriate. Thus, improvement to camp sites, chopping bush for bedding, burying rubbish, large camp fires, making one's own track, blazing tracks, etc., are no longer acceptable practices. Diffusion of these notions via user-group organizations, minimum impact code publicity, park interpretation and the thoughtful use of signs may all help. Norm replacement is essential if unduly coercive measures are to be avoided.

Siting and Construction

Debate on mountain huts in New Zealand parks becomes hard-hitting when reference is made to the misfortune and occasional tragedies which have been associated with them. Many of our existing huts no longer stand on their original sites and it is more by good luck than good management that loss of life has not been higher. Huts have been blown down or collapsed due to wind blasts, snow avalanches, rock falls and volcanic eruptions. Others have been jeopardized by the erosion of moraine deposits used as foundation and some huts have collapsed through excessive snow pressure. Some lowland huts have been damaged or destroyed by landslides and lives have been lost by some of the above phenomena. To suggest, however, that these failures are a result of poor siting is too simplistic. Natural disasters and freak accidents will always be with us but it is now possible to take advantage of superior techniques and technologies to assess wind resistance, snow creep effect, foundations and anchorage, to name three timeless instances of threats to siting and construction.

Five major factors of siting and construction should be considered. They are: siting; wind resistance; foundations; insulation and ventilation; construction and materials.[1]

i. *Siting:* Presuming that the decision to have a hut has been made, size should be considered. Small huts tend to some extent to keep usage down and to have reduced impact on access routes, landscape values

[1] *Mountain Huts.* Rangers II, Seminar 3. Lincoln College, Canterbury, New Zealand. 1977.

and associated ecological impact.[2] Safety considerations in siting should be primary. A sound rock base, free of avalanche or rock fall danger, having protection from high winds yet free from drifting snow are all important but to some extent contradictory. The 'ideal site' is not easy to find. Aspect, drainage and outlook are also important, and related, but likewise difficult to combine. If only one site is considered 'safe,' then aesthetic considerations may have to be passed over. Clearly however, the siting or resiting of a hut should reflect the mature consideration of an experienced team and hasty decisions carefully avoided.

ii. *Wind Resistance:* Avoiding the possible dangers of avalanche, rockfall and snow-creep, while ensuring access, invariably suggests siting huts on rock ridges or knobs exposed to the hazard of high winds. Wind tunnel tests, carried out at Lincoln College (New Zealand), suggest a maximum gust velocity of 80 m/s as a suitable planning goal for wind resistance design. Internal pressure is also very important. Differential pressure occurs relative to the amount of ventilation and the consistency of the wind. Sudden gusts will increase pressure and inadequate ventilation may prevent its restoration to safe margins. Stress placed on roof and walls at these times is likely to leave a weakened structure. Adequate venting is thus required to enable pressure adjustments to occur within seconds of the effects of sudden gusts.

A further consideration of air flow patterns for conventional huts suggests the need for additional strengthening at key points. It also illustrates the need for investigation of non-traditional design such as domes and cylinders. Where new designs are to be tried wind tunnel experimentation will prove cheaper and more accurate than taking a chance on 'common sense or intuition.' Wind loading must therefore be seen as a major factor in the design of huts for mountain areas.

iii. *Foundations, Anchors, Tie Downs:* These serve two major purposes. First they support the building while holding it clear of irregularities or obstructions at ground level. Second, and vital in the mountain setting, is the function of holding the building down by anchoring it to the site.

Figure 5. The Gardiner Hut is sited at 1700 m. It is a useful and workable design. Of 18 gauge corrugated iron, it could be relocated if necessary using helicopter transport. Photo: Mt. Cook National Park.

Conventional pre-cast concrete pile foundations are still used to serve standard timber constructed huts with the additional use of steel cables which are passed over the framework before the roof covering is added, and secured by ground anchors out from the four corners. Details of these devices and the additional requirements they place on building techniques are sufficiently demanding to require specialist advice. Readers contemplating such construction are again reminded of the advantages in non-standard designs which generally have simpler anchorage and foundation requirements.

iv. *Ventilation and Insulation:* Near fatalities where parties have 'sealed off' their huts to eliminate draughts and cold weather, warn against the dangers of gas build up. No hard and fast rules are available but as a general guide a minimum of two vents are required. Ideally, incoming air should diffuse over the sleeping area, past the cooking area, and be exhausted at the opposite end of the hut. Problems of spindrift entering, freezing up, too much draught, or vents being rendered inoperable by hut users, all plague the hut system. The only clear message is that the problems will not look after themselves.

Insulation for huts, particularly those built at high levels, should not be considered a luxury. Heat losses from an uninsulated hut can be dramatically reduced by careful planning after first noting such constraints as fire resistance, cost, ventilation and attractiveness to vermin. Insulating materials, generally, either (a) trap air (glass fibre) or (b) are reflective (foil), trapping air in an enclosed space to provide a buffer between internal and external temperatures. Type "a" materials tend to have more advantages and fewer faults then "b" materials. Constantly improving technology in this area requires planners to continually up-date their information.

Control of heat loss can be managed in other sophisticated ways such as air-locks, or in simple ways such as drapes over windows which will reduce losses by 30-40 percent. While such a measure may seem incongruous in a mountain setting, the principle is worth noting.

v. *Construction and Materials:* Choosing a design to suit the purpose is very much a problem-specific task. In New Zealand, a variety of styles have been tried including geodesic domes, barrel shape, Nissen-type, 'A' frame, and conventional rectangular shapes. Materials used include glass and perspex for windows, while exterior construction has included corrugated iron, aluminum, plywood, particle board, timber, hard board, stone, fibre-glass, and ferro-cement. The pros and cons of each of these requires management to obtain specific information from others who have tried a product or combinations, and the conditions under which they have been used. It is information of this sort rather than the salesman's "pitch" that should guide the final choice.

Over recent years helicopters have been widely used to aid the erection and servicing of huts. Pre-cut models of various styles, especially the solid timber 'Lockwood' design, lend themselves to rapid construction. With skilled supervision, erection can be undertaken by non-specialists and a hut capable of accommodating 24 trampers can be completed within a few days.

Servicing

One criticism of huts, especially in the past, is the unfortunate degradation of the nearby environment as users gather firewood, bury rubbish, and 'spill' out into the tussock with their packs and sleeping bags if huts are overcrowded. Several of our parks have partly solved these dilemmas though the answer is expensive. Helicopters are used to fly in supplies of wood and solid fuel and at the same time backload rubbish to the nearest road end where it is transported by vehicle to the dump. However, trampers in many parks are expected to have their own cooking equipment, and emergency heat sources only are provided. Likewise, trampers are expected to remove their own rubbish and "carry out empty what you carry in full" is being encouraged as the new norm. The 'burn, bash and bury' ethic of yesterday is now 'burn, bash, and bring out'.

Safety

A further management tool which can readily be included as part of a hut system is an 'Intentions Book' which serves also to gather statistical information. One of the norms of back country use in New Zealand which most trampers recognize is a brief entry in the hut book of their party's intentions. This information provides insights to distribution

[2]. Size is likewise important for 'atmosphere,' and other social values. A major criticism of large huts lies in the difficulty of several small groups establishing 'easy' social relationship under such conditions.

and movement patterns. Often it has provided crucial information for successful search and rescue operations.

The 'overflow' problem is more subtle, and short of a rationing system, will remain as such. Good information may help a little and potential users are likely to select another route if they know their first choice is certain to be crowded.

Huts do tend to de-limit physical movement on the site itself. Space for a 12 person hut and the group's movements around the hut is considerably less than the space required for 6 two-person tent sites. 'Improvements' are not made to a hut site; given careful and regular maintenance the impact of the hut may well be more acceptable to overall park values than a proliferation of tent sites.

The Numbers Game

Much has been written about carrying capacity and its biological and social components. In New Zealand, park visitation has increased many-fold over the last two decades. Future increases however, remain but conjecture; linear extrapolation is of little use, and the influence of potential petroleum restrictions uncertain. The net current effect of increased visitation is that hut accommodation becomes taxed only at peak periods, e.g., Easter holiday, and then only because most of the visitors arrive at the same entry points at about the same time. This suggests advantage in having formed and managed campsites near entry points to take the pressure off huts in these areas. Further into the parks, dispersed camping, plus huts, may suitably fulfill user needs. If the number of visitors using park huts continues to increase, it is unlikely that further huts would be built to accommodate them. Careful monitoring of use patterns must therefore be continuous, and appropriate management options taken as a result. Increased use of random tent camping may ultimately have to be controlled by changes in regulation but it is unlikely, in this country, that recourse to regulations would be the first option employed.

Zoning within parks and between parks, each of which has different objectives, would still enable a measure of free choice for users at the same time that the task of management is simplified.

Pushes and Pulls

The notion of zoning implies a two-fold purpose. On the one hand management is suggesting that the integrity of the resource can only be retained by de-limiting development and use, while on the other, it is acknowledging the cross-sectional nature and diverse interests of the user public. Less explicit in the arguments for and against zoning is the extent to which the 'nature' of the zones exercise push and pull influences on visitors. The presence or absence of huts may act either way, attracting some users and repelling others. Indeed, the rapid technical advances of tentage, clothing and other equipment for storm conditions, now add a further dimension to the challenge of being self contained in the back country. A 'no hut' policy may well be possible and desirable for parts of New Zealand other than designated Wilderness Areas. Nevertheless, it remains clear that management policy which seeks to control random camping will succeed only to the extent that huts remain the most attractive alternative in an area. This means they must be well-sited, clean, convenient, well-serviced and above all, to have that 'atmosphere' seen to be part of the mystique of the 'hills.' Even in new huts this element can be partly built-in through careful and sensitive design and construction. The antithesis of this combination will push users to other places of their choice, removing the initiative from management to control the dispersal of park users.

Conclusions

The opening section of this article raised doubts that any conclusions would be reached. Huts and tenting are seen to be legitimate alternatives and complementary; the choice one way or the other depends on physical and sociological factors such as perceived crowding, weather, site attractiveness, hut atmosphere, previous experience of the area or one's friendships and social bonds over a lifetime of experience. The fact of knowing and recognizing these complexities, and the limits to which they should be allowed to influence management, is doubtless the key to decisions to build or replace huts or to enable unrestricted camping. None of this necessarily over-rides the prior need for safety but does recognize that changing equipment and techniques now make this argument less potent than previously.

In the final analysis, the ecological truism that 'nothing happens by itself' is worth recalling. Contradictory as it may seem, the consequences of 'huts only,' or 'random or controlled tenting only,' may lead to less control of park users, particularly back country users, who tend to be highly individualistic. Not to recognize this is to invite laws and regulations to be flouted. The alternative is to offer an apparent flexibility which will in turn lead to a set of resource oriented norms. Only if these stem from the unselfish motives of the users themselves will our treasured back country retain the character which presently makes it so attractive.

Acknowledgements

This subject was a topic for debate at a Ranger's Block Course held at Lincoln College, Canterbury, New Zealand in February 1978. Two booklets 'The Visual Impact of Huts and Shelters in National Parks and Reserves' and 'Mountain Huts,' (Lincoln College Press), have also served to influence this article.

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PARK TECHNIQUES

Converting Black & White Negatives into Black & White Slides

James S. Davis

What do you do with those old black and white photos and negatives that tell the story of the early days of your park? Do they just gather dust on a back shelf, unused and inaccessible in spite of their historic importance?

You could show them off . . . but how do you share an old photo with several hundred people at a visitor center or campfire program?

Faced with this problem, the staff at Mesa Verde National Park worked out an inexpensive answer: black and white slides.

With them, a small viewing screen in a visitor center, or a large screen in a lecture area can become a "magic window" into the past, a fresh and interesting view of early exploration, a view of life styles and events of a long-past time, all in vigorous black and white rather than the color normally seen.

At Mesa Verde, we are now able to cover the period from 1875 to 1935 with slides made from more than 100 excellent pictures of the period that otherwise would be unseen. Visitor response has been enthusiastic.

For months we researched methods of bringing into circulation the several thousand 4″ x 5″ negatives in our files. Many methods were tried, and we ended up with one that worked. You simply photograph a black and white negative with standard black and white film.

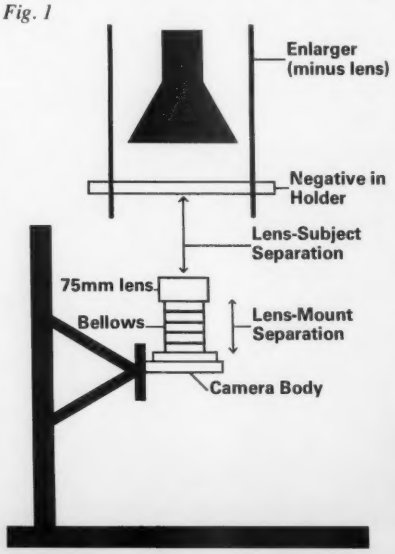
The process involves illuminating a negative (as on a screen or in a projector), photographing it, and processing it as normal black and white film is done. Several advantages are apparent in this process: (1) the cost is low, (2) standard developing and darkroom techniques can be used with little alteration; (3) the complete process takes only a short time—half an hour; (4) overall control is possible throughout the process for "fine tuning" the end product; (5) readily available, standard black and white film can be used; (6) black, white, and especially grey colors come out true. By eliminating the process of printing the negative onto white photographic paper, an entire step in most duplication techniques is avoided. The end result means better picture quality in every way.

Equipment needed

We used a standard darkroom enlarger and a 35 mm single lens reflex (SLR) camera adapted for use with the bellows and the 75 mm lens from the enlarger. The enlarger was used to backlight the negative to be photographed in its negative holder, and the adapted camera then was focussed on the illuminated negative. This allowed photographing the negative or any selected portion of it on black and white film in the SLR camera. After developing the film in the usual manner, the result was a positive black and white transparency which could be mounted in an ordinary mount for use in a slide projector. The diagram (Fig. 1) shows the arrangement we improvised, but any similar arrangement should work as well. For example, the negative to be photographed could be placed on a light table and properly masked and then photographed as above with the camera mounted on a copying stand or a tripod. A copying lens, or a "macro" lens, on the SLR camera conceivably would permit the close-up photography needed to take the picture of the negative. (See "Basic Photo Equipment," PARKS Volume 3, No. 1). Figure 2 shows an arrangement using a Bowens Illumitran instead of the enlarger. Some experimentation with the type of equipment usually available in a photographic darkroom and with the camera adapted to take a close-up picture should suffice.

After setting up the equipment, the process is quite straight forward at this point, but what makes a good negative does not necessarily make a good slide. The following text deals with the problem of producing high quality slides by this process.

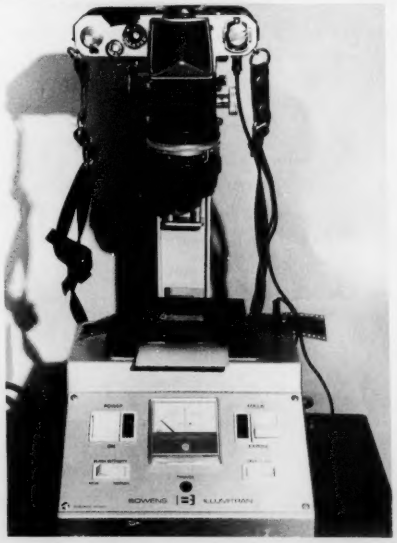
Fig. 1



Film types

During the experimentation period, Kodak's Panatomic-X, Plus-X, and Tri-X film types were all tried. Due to its exceptional latitude, Plus-X emerged as the best type for continued use. It produced high contrast slides yet re-

Fig. 2 — This photo illustrates another approach to conversion of B/W negatives to slides. Here the camera, bellows and lens are positioned above the negative subject and the light source beneath it. This system makes the focusing adjustments easier to see.



tained the grey tone quality. Prospective users might begin with a film like Kodak's Plus-X (ASA 125/22 DIN) and later experiment on their own with other film types.

Equipment set-up and preparation

1. Bellows assembly
   a) Take a 75mm lens from the enlarger and screw it onto the movable portion of the bellows (any required adapting rings come with the bellows).
2. Camera assembly
   a) Remove the camera lens from the camera body and set it aside.
   b) Attach the bellows assembly onto the camera body.
   c) Attach the camera with bellows to the camera stand using the mounting screw on the camera bottom.
3. Final assembly
   a) Remove the lens and lens housing from the enlarger.
   b) Position the camera stand with camera and bellows under the enlarger. (See Figure 1).

Once you select the negative you wish to duplicate, place it into the enlarger as you would normally do. Special care should be taken at this point to insure that the camera squarely faces the negative in the enlarger. Any misalignment will cause focusing problems.

Focusing and image selection

This section is the most exacting and troublesome. The prime considerations are: lens selection, lens-camera mount separation, and lens-subject separation. As you can see from the set-up drawing, the 75mm lens from the enlarger becomes the lens for the camera. Using the bellows, focus the negative by looking through the camera viewfinder. Sample distances for various subjects as follows:

Subject	Lens-camera, lens-mount separation	Lens-subject separation
Entire 4″ x 5″ (10.16 x 12.7 cm) negative	2⅛ inches (5.4 cm)	12 inches (30.5 cm)
Enlargement of ¼ of a 4″ x 5″ negative	3 inches (7.6 cm)	7 inches (17.8 cm)
Entire 35 mm negative	3½ inches (8.9 cm)	5¾ inches (14.6 cm)

Lens-camera lens mount separation was achieved with the camera bellows. Lens subject separation was achieved by varying the camera height using a camera stand (See Figure 1).

Exposure considerations

While a good negative is reasonably dense, a good black and white slide should be on the "thin" side — underexposed. As a general rule, you should "stop down" (increase the f stop number) by 3 stops to achieve the proper exposure. However, depending on the contrast and density of your negative, you may have to stop down anywhere from 2 to 4 stops. To insure a choice in your slides, bracket many of your shots. This means that if your light meter recommends $^1/_{125}$th of a second at f 4, you should stop down by 3 stops to f 11, and then expose at $^1/_{125}$th at f 8, f 11, and f 16. You may find that even though f 11 is the recommended exposure, you will often select the black and white taken at f 8 or f 16 as the more desirable one. Here individual taste rules because different people viewing the slides will have various opinions as to what the best exposure is.

The development process

The second major step in the slide making process occurs in the development tank. The underexposed film is now overdeveloped and results in a high contrast, thin negative. In this case, since the subject is a negative, the result is a positive — the black and white slide. A developer such as Kodak's HC-110 Dilution B produces good results. Development temperatures should be kept around 18° to 20° C (65° to 68° F). At these temperatures extend the development time to 9 to 11 minutes. For tank agitation, consult the instructions provided with the film.

After removing the negative from the developer, continue with the usual stop bath and hypo (fixer) development process. The recommended film treatment is a solution similar to Kodak's Photo-Flo 200 which reduces drying marks. Such marks and spots are exceptionally noticeable on a large screen unless care is taken.

Mounting the slides

The developed and dried film then needs to be cut into individual frames and mounted in slide mounts. For this procedure an illuminated film cutter or a pair of scissors work equally well. Following the cutting, the frame is inserted into a cardboard slide mount and placed in a heat sealing mounting press. Ten to fifteen seconds in this hot press adequately seals the slides in place. An ordinary clothes pressing iron or a dry mounting tacking iron could be used instead.

The results of your handiwork are high quality black and white slides that can be handled, used, and stored just like any other slides. At Mesa Verde an entire campfire program was developed using the black and white slides exclusively. Not only were over a hundred photos put into active circulation, but also the remaining several thousand Mesa Verde negatives can now be processed and shared with the visitors. Potentially such a process could be incorporated into countless other presentations bringing alive scenes of the past which might otherwise remain forever buried.

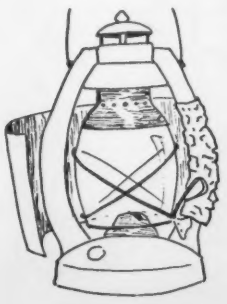
I wish to acknowledge and thank the efforts of Gilbert Wenger, Chief Archeologist at Mesa Verde National Park, for his continuing technical advice during the development of the black and white slide process. Financial support was provided by the Mesa Verde Museum Association. Together they promoted a creative environment which made efforts such as these and others possible.

James S. Davis served as a Ranger Historian at Mesa Verde National Park until the spring of 1976, and had an earlier assignment in similar work at Macinac Island State Park in Michigan. He is now a flight instructor with the U.S. Air Force.

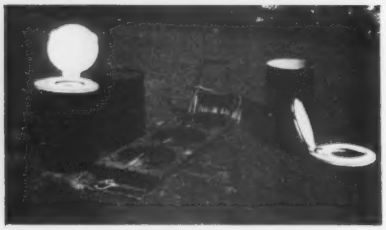
Illuminating the Speaker at "Dark" Campfires

The amphitheater at Wawona Campground in Yosemite National Park is regularly used by interpreters to talk to visitors gathered at the evening campfire. But here, unfortunately, the fire circle is off to one side, and thus almost no light is thrown on the speaker, who comes forth as a voice out of the dark.

We recently tried a successful yet simple lighting system for these programs. Two kerosene lanterns were partially enclosed with aluminum foil reflectors to serve as flood lights. The lanterns are set on an upright section of a log some 12 to 18 inches (30 to 45 cm) high and tilted slightly. We have found these lantern floodlights cast just enough light to illuminate the speaker without detraction from the nature of the program. Our audience interreaction and attention has increased significantly with the addition of these simple kerosene (paraffin) lanterns. *William Dengler*



Wintertime Sanitation



Wintertime Sanitation in primitive areas, especially in snow, becomes a major problem when a large number of people are present. At Mt. Rainier National Park a solution has been worked out with portable toilets on toboggans. Superintendent William Briggle comments: "We ask that groups of 15 or more people use our portable wintertime sanitation equipment. It is very simple to operate but somewhat cumbersome. Plastic bags are used in the cans and are removed upon return to an area where they may be disposed of by the appropriate personnel.

"Many of the large groups that use our areas in winter have their own system, similar in design to ours. Improvements could probably be made in the area of weight and in the type of snow sled used. One can imagine that the entire apparatus may become very heavy and difficult to move around.

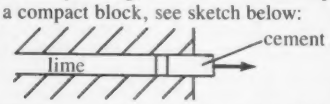
"We feel that the concept is important and necessary for our area and environment. There seems to be almost total lack of waste decomposition in either high altitude snow or low altitude winter conditions. This portable system is most convenient for large groups, but the principle must follow for all groups under these conditions."

More on "Repointing Mortar Joints . . ."

Dear Sir,

I read with great interest "Repointing Mortar Joints in Historic Brick Buildings" by Robert C. Mack in PARKS, Volume 2, No. 4. I agree with the contents; however, in carrying out my conservation projects I believe in completely avoiding cement mortar. Basically lime mortar has all the advantages. I would like to point out two more disadvantages of using new cement mortar joints.

1. After a relative short period of time the cement pointing, because it is much harder than lime pointing, will move out of the joint as a compact block, see sketch below:



2. Cement pointing, because of its density, hinders the drying of the damp wall, thereby causing damage, especially in freezing temperatures.

Dr. Georg Mörsch
Landeskonservator Rheinland, Bonn

The Listening Post

The Listening Post is a new audio information device designed for a tough trouble-free life indoors or out. It is available in pillar form, entirely self contained or remotely driven, or just remotely driven in wall mounted form. It is highly resistant to vandal and weather damage yet very simple to operate and service. Being smaller than a normal signboard it is visually unintrusive. It is audibly unintrusive too; it uses a special inexpensive listening tube through which the commentary is heard and it does not therefore intrude on other people's quiet enjoyment of their surroundings.

Although an 18 minute commentary is possible with the standard, inexpensive yet reliable endless-loop tape-player, a considerably shorter commentary is generally recommended as of more practical value. Once started, the commentary completes its cycle so that it is normally heard only from the beginning. Four outlets allow simultaneous listening by small groups.

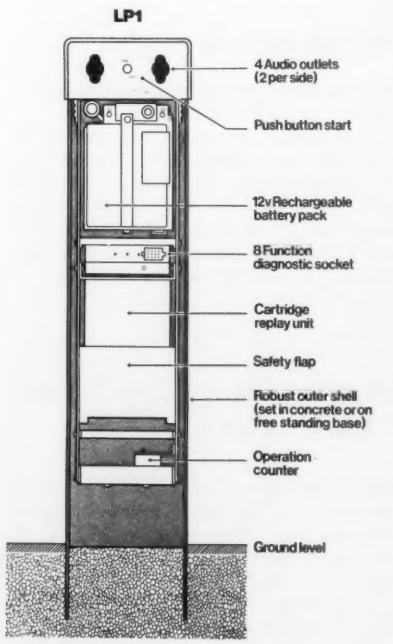
The innovative feature lies in the use of a magnetic coupling. Through it the tape-player's output is transferred, via an electro-magnetic transducer fixed in the unit's head, to a simple steel diaphragm implanted in the moulded end of the visitor's listening tube. The visitor listens at one end of the tube while the other, with the diaphragm, is held by a rugged bayonet type fixing within the varying magnetic field of the transducer.

Listening tubes are low-cost items. They can be sold, hired and recycled with new ear pieces, or given away. Because of the personalized listening, units can be used in close proximity without annoying sound-overlap. The concept allows for different languages or interest levels to be dispensed from any of the unit's four outlets. Outlets can be arranged to provide these different commentaries to synchronize with a common visual display.

The machine can be on duty 24 hours a day and battery powered units require battery charging not more frequently than once per thousand replays of a 1½ minute message (the maximum time for which most people will normally listen).

The main advantages of audio commentaries are that visitors are free to use their visual senses to take in their surroundings while being told about them, being thus relieved of the need to read; and the standard of delivery, which can include dialogue, sound effects, etc., can be to a consistently high standard.

Further information can be obtained from the designer, Philip Eden, Audio-Visual Specialist, Countryside Commission, John Dower House, Crescent Place, Cheltenham, Glos GL50 3RA, United Kingdom, or from the manufacturer, Rediffusion Reditronics Ltd., La Pouquelaye, St. Helier, Jersey, Channel Isles.



BOOKS & NOTICES

Yellowstone, The Story Behind the Scenery, 1977. Hugh Crandall, photography by David Muench. K. C. Publications, P.O. Box 14883, Las Vegas, Nevada, 89114, U.S.A. U.S. $2.00 paper; $5.50 hardback. Post paid in U.S.A. Add $.50 for surface postage elsewhere. 23x30.5 cm, 48 pages.

Because Yellowstone National Park is generally credited with being the first national park in the world, many who have been there and others who have not may be interested in this well written booklet. It tells briefly the story of its establishment in 1872, and contains excellent accounts of the flora, fauna and geology of this great park. Special attention is paid to the hydrothermal features. It is splendidly illustrated with color photographs and a good map.

The publisher has produced similar books on other U.S. national parks and reserves

— Gordon Fredine

World Directory of National Parks and Other Protected Areas—Second issue, 1977. International Union for Conservation of Nature and Natural Resources, Morges, Switzerland. Volume II, looseleaf cover and 397 new and replacement sheets, US$60. post free. Two-volume set, complete, US $85.

The second instalment of 397 World Directory loose-leaf sheets, together with the 250 sheets of the first issue published in 1975, completes the two volumes of this indispensable reference book for all workers in the national parks field. It covers a further 43 countries, bringing the total number represented in the Directory to 60.

Volume I of the set, issued in 1975, was reviewed in PARKS, Vol. I, No. 2. As pointed out at that time, data sheets are the heart of the Directory. They are simple, direct, and about as complete as one would hope for. Careful editing holds the data contained in 21 standard entries to the front and back sides of the sheet devoted to each area. Usual entries cover name, type, biotic province, date established, location, altitude, zoning, staff and budgets. More elaborate treatment is given to land tenure, physical features, vegetation, noteworthy fauna, disturbances or deficiencies, tourism, scientific research, special scientific facilities, and principal reference material. As a final helpful note, often absent in other publications, each sheet provides a mailing address for the local park administration.

The Directory was published with the financial assistance of the World Wildlife Fund and UNESCO.

Extinction is Forever: Threatened and Endangered Species of Plants in the Americas and Their Significance in Ecosystems Today and in the Future. Edited by Ghillean T. Prance and Thomas S. Elias. The New York Botanical Garden, 1977, 437 pages. U.S. $20.00. Add $1.00 postage in the U.S., $2.00 outside U.S.

Plants are a foundation of human life, but we are destroying many species and their habitats. At the symposium held at the New York Botanical Garden May 11-13, 1976, concerned botanists made a detailed and much-needed assessment of the situation in the Western Hemisphere. The published proceedings form an extremely valuable baseline reference and guide for future preservation efforts.

The subject is approached country by country (state by state in the U.S.) and also thematically by certain plant families and special topics. Country accounts, with the only large omissions being Bolivia, Uruguay, and Paraguay, identify species and groups in trouble and review steps taken to protect them. In many cases recommendations are made for further steps and the economic roots of natural area destruction are explored. Other papers address such topics as endangered cacti, orchids, and palms and use of computers as an aid to solving endangered species problems. Amazonia receives special attention; five papers discuss its plant life and their relation to economic development. Conference resolutions, a selected bibliography on endangered plant species of the world, and the text of three important documents close the volume.

The distinguished contributors, of whom about one third come from Latin America, are generally worried but not depressed. While human societies are destroying much plant life in the Americas, they are also taking action against this trend. Biological reserves, though often unprotected, are being established. Scientific knowledge and public awareness are growing. The symposium and its publication should give new energy for this battle to preserve plants, and with them man, in the Western Hemisphere.

Copies may be obtained from: Publications Department, The New York Botanical Garden, Bronx, New York 10458, U.S.A.

—Napier Shelton, U.S. National Park Service

Preserving Our Natural Heritage, Volume I: Federal Activities. 1977. The Nature Conservancy. U.S. Government Printing Office, Washington, D.C., 323 p.The U.S. price is $8.50. The overseas price of $10.63 includes postage.

The diversity of nature and its human setting calls for a diversity of ways to protect nature. *Preserving Our Natural Heritage, Volume I,* presents the many methods the U.S. government has developed to accomplish this, ranging from complete protection of large, pristine areas, such as national parks, to restriction of logging in the immediate vicinity of nesting trees of rare birds. The book offers resource managers in other countries a rich collection of ideas to be tried, and Americans, for the first time, a clear, thorough explanation of the nature preservation work of their federal agencies.

The first half describes the structure, function, funding, and natural area acquisition and management by the principal federal agencies engaged in this activity: the National Park Service, Fish and Wildlife Service, Bureau of Land Management, Forest Service, Bureau of Outdoor Recreation (largely a planning and coordinating agency), and the Department of Defense. Examples are given of areas administered by each agency, and contacts and published sources of information are listed.

Altogether, these agencies administer one-third of the land in the United States. Each guards natural resources under its care while serving varied central purposes, such as public enjoyment, wildlife production, grazing, timber growing, or military training.

Other sections of the book describe inter-

agency natural area systems and programs. These address, among other things, wilderness, wild and scenic rivers, hiking trails, marine sanctuaries, and endangered species.

Volume II will describe activities of the individual U.S. states and Volume III the work of private U.S. organizations.

The three volumes written by The Nature Conservancy for the National Park Service, are a contribution to two programs: UNESCO's Man and the Biosphere Program (Project 8—"Conservation of Natural Areas and of the Genetic Material They Contain") and the 1972 U.S.-U.S.S.R. Executive Agreement to exchange environmental information.

—Napier Shelton, U.S. National Park Service

Protecting Natural Areas—An Introduction to the Creation of National Parks and Reserves, 1978, Philip W. Quigg. National Audubon Society, 950 Third Avenue, New York, NY 10022, U.S.A. 44 pp., in English, French and Spanish editions. Free.

This is an attractive and useful booklet. It is the third in a series of international publications produced by the National Audubon Society as a contribution to the better understanding of worldwide natural resources conservation needs and programs.

The material in the booklet ranges from a lucid recital of the reasons for protecting natural areas to a comprehensive review of sources of information and organizations, international, governmental and private, that can be of great assistance to those concerned with environmental protection and human well-being. Although it is aimed primarily at individuals who are not professionally engaged in conservation work but who have a need-to-know the fundamental relationships between economic development and the world around them, this reviewer believes the information will be of significant value to professional conservationists as well. It brings together in a convenient form basic information that the professional often finds himself searching for.

The conflict between development and the well-being of our natural environment is no stranger to most of us. It is helpful to have this conflict reduced to its simplest terms so that both sides can find ways of reconciling their differences.

Of particular value to many readers will be the descriptions and discussions of the existing and potential international conventions and treaties that now give promise to better international understanding and cooperation. More pragmatically, the ideas presented on how to proceed, both nationally and internationally, with the task of protecting man from himself and preserving a world of beauty and sustained utility are refreshing as well as challenging.

Gordon Fredine

First Ibero-American Meeting on Ornithology and World Meeting on Ecology and Bird Behavior

This meeting will take place in the city of Buenos Aires, Argentina, during the last week of November 1979 (11/25-12/1) under the sponsorship of the Asociación Ornitólogica del Plata and the collaboration of various local and international Institutes, Schools and Research centers.

Work sessions and lectures will be held, concerning: (1) Anatomy, physiology and genetics; (2) Paleontology, phylogeny, taxonomy and zoogeography; (3) Ecology and migrations; (4) Ethology; (5) Protection and conservation; (6) Applied ornithology; (7) Methodology for ornithological investigation, management and education; and (8) History, bibliography and miscellaneous.

The official languages of the meeting will be Spanish, Portuguese and English. Presentation of papers and communications are welcome. Their abstracts should be received before March 31, 1979, containing less than 300 words. Registration fees vary from US$50. to US$200., according to kind of membership.

Inscriptions, suggestions and requests for more detailed information should be sent to:
Prof. Juan Daciuk, President
Organizing Commission
1er. Encuentro Iberamericano de Ornitología
Casilla de Correo 3368
1000 Buenos Aires, Argentina.

A Note about PARKS' future . . .

With the 10-issue pilot period now behind us, PARKS Magazine begins a new publishing cycle with this issue, Volume 3, Number 3. As you will note by reading the masthead on the inside front cover, IUCN is now serving as publisher for the sponsoring group, of which it is a member. The World Wildlife Fund also joins the group with this issue.

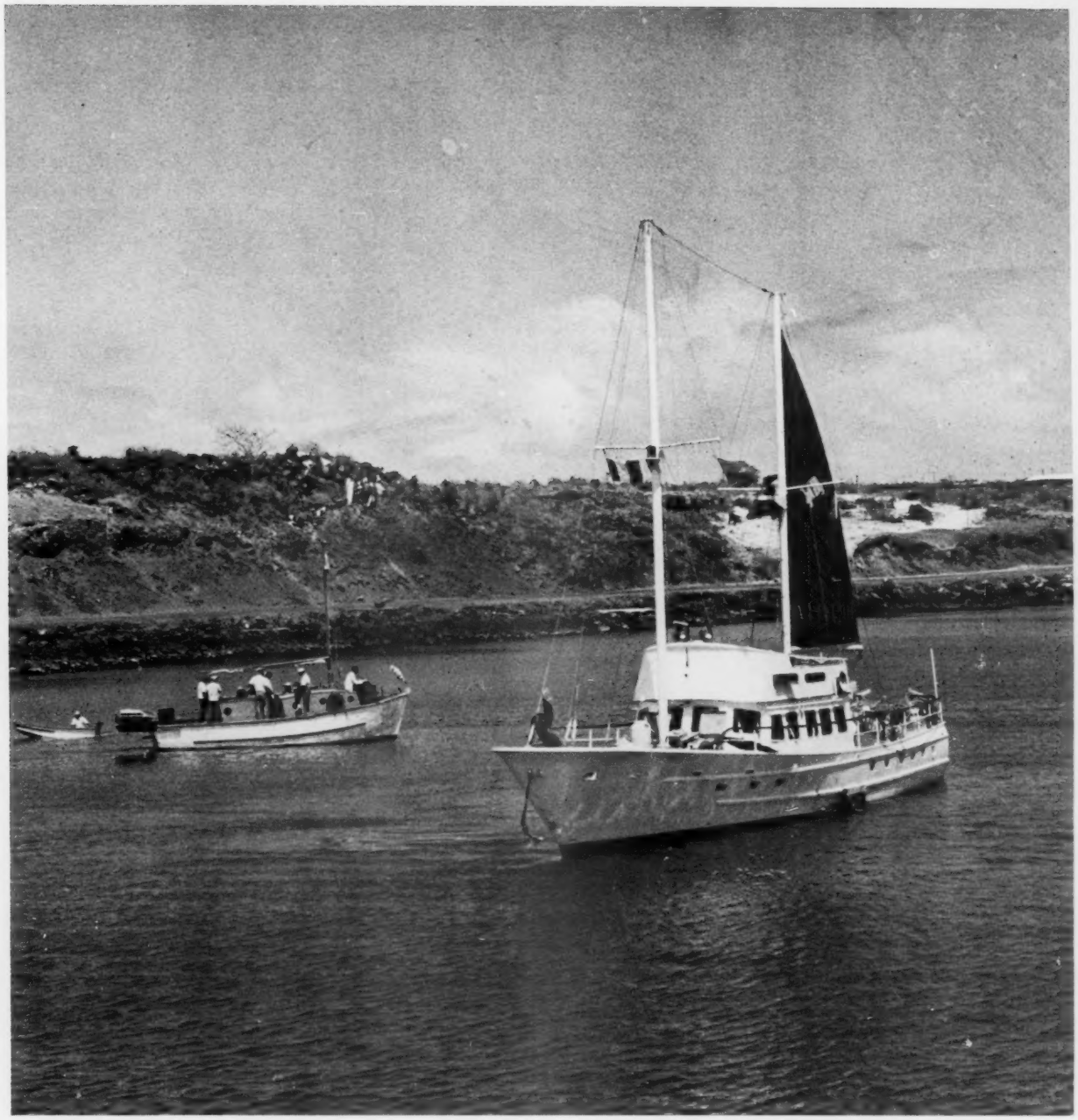
PARKS will continue to be published in Washington, D.C. for the immediate future, and no change is planned in either our editorial or circulation policy. The magazine will continue to be distributed by mail, without charge to qualified individuals.

Funding is still a problem. Organizations wishing to cooperate with the publishing group are invited to write to the Editor.

We wish to acknowledge with special thanks the cooperation of Eastern National Park and Monument Associations of Philadelphia, Pa./USA, in this project. This organization provides invaluable assistance by acting as our fiscal agent: receiving, disbursing and accounting for our funds, and providing management advice.

Readers are reminded that PARKS exists to serve them, and to function as a medium for the international exchange of information and ideas in the fields and disciplines we address. Editorial contributions are thus invited.

The Editor



Beagle III, the research and transport vessel in the Galapagos, was built with donations channelled through WWF. Photo: Dr. Hartmut Jungius.

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